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Coming on diesel locomotives: **Silicon rectifiers** that pay off on PRR electrics . . . . . p. 18

April 12, 1965

RAILWAY AGE WEEKLY

New cars for hauling steel enter C&O-B&O service p. 16

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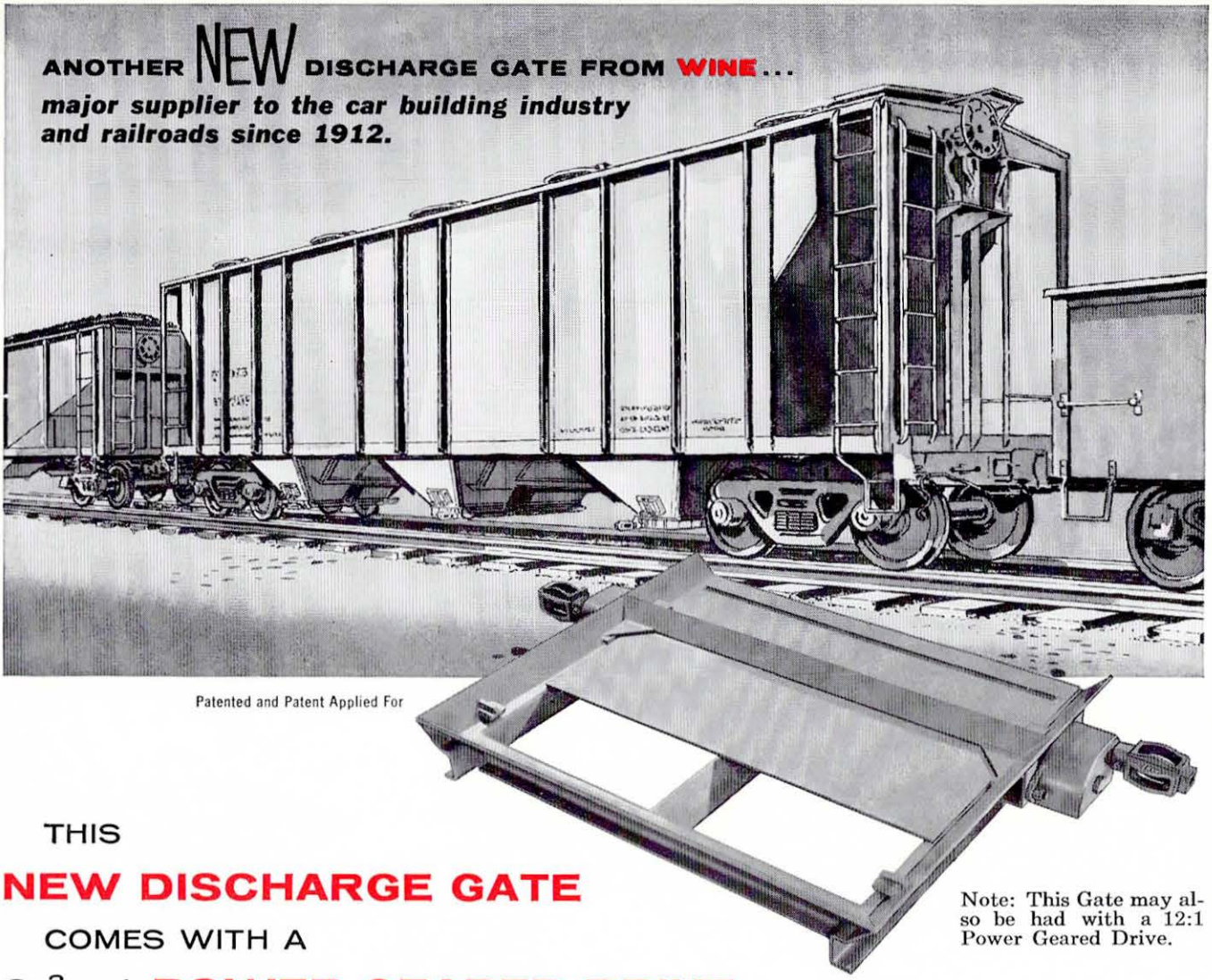

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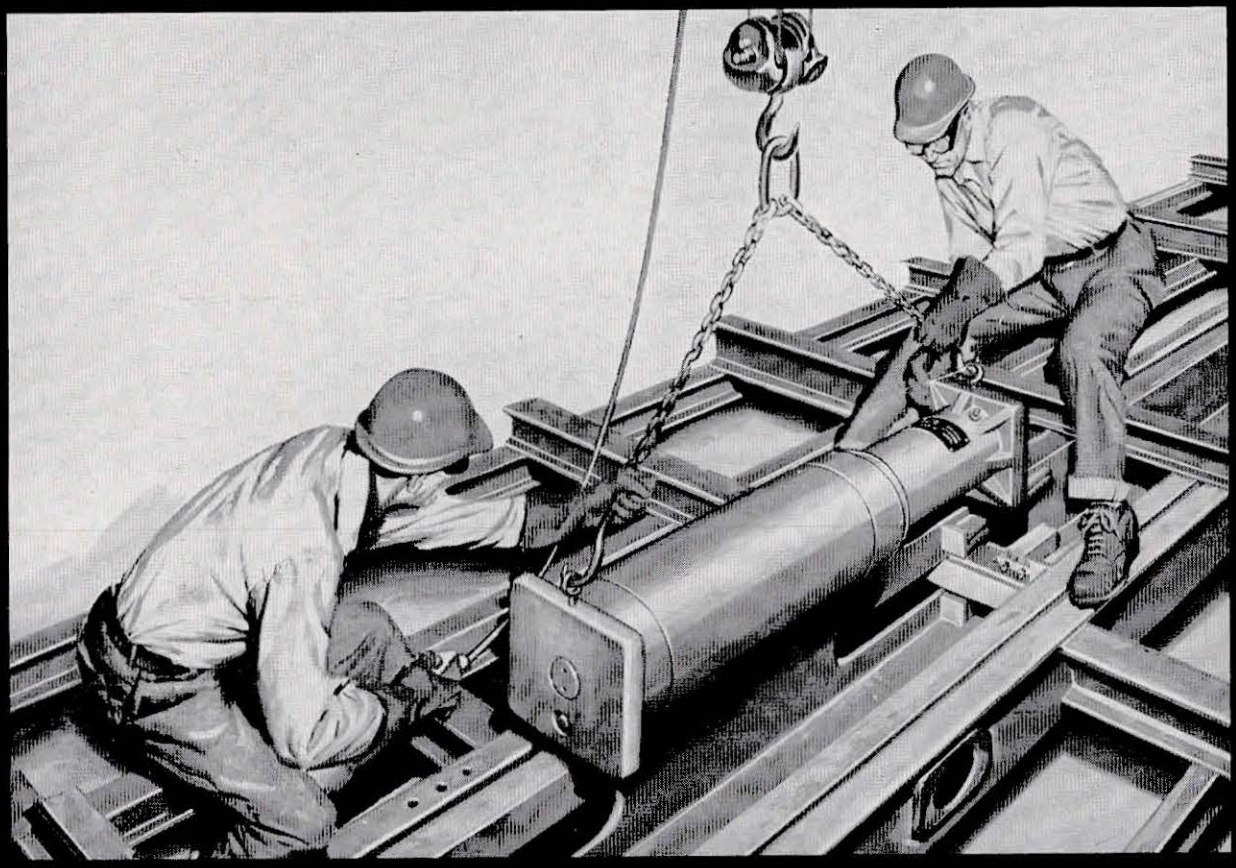

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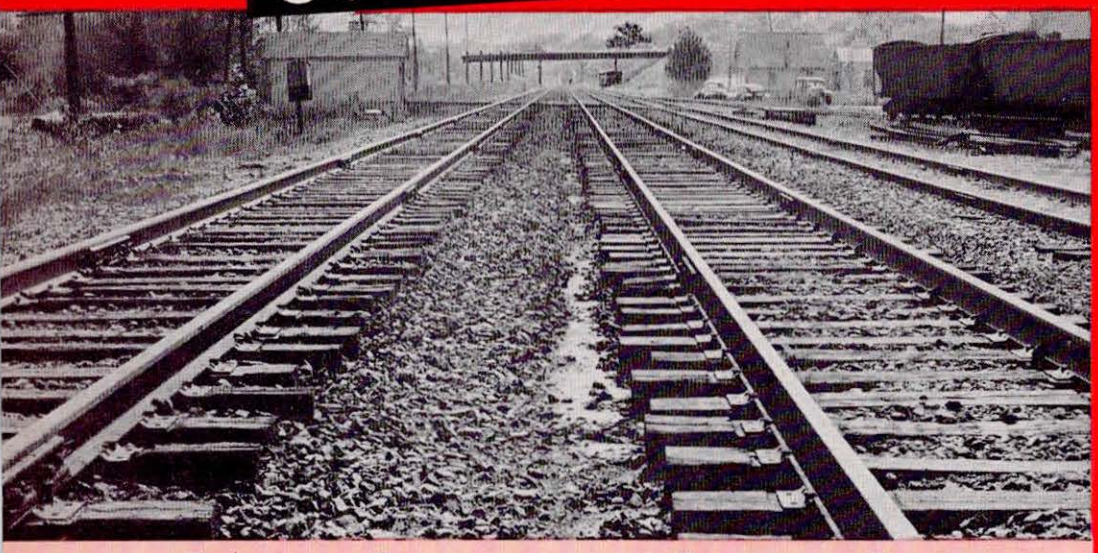
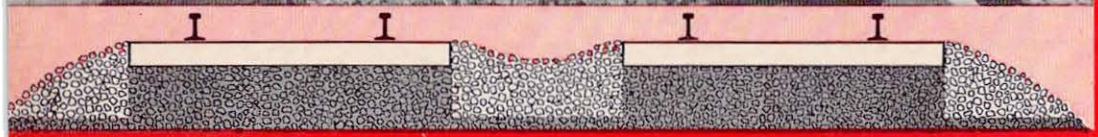


Cross-Section showing little or poor drainage before Ballast Cleaning.



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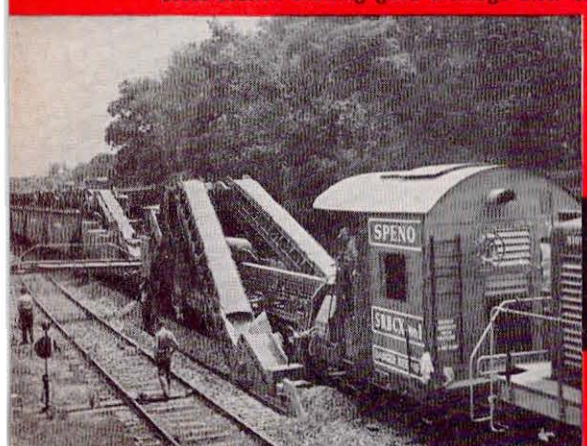

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RAILWAY AGE WEEK AT A GLANCE

April 12, 1965 • Vol. 158, No. 15

New hope for New Jersey commuter lines

The state has devised a $56-million plan to give some much-needed financial strength to the state's railroads. **p.10**

How many firemen are out of work?

Sets of figures on unemployment compiled by the BLF&E don't agree with those of the railroads. **p.11**

Mail choice to be stamped out?

The railroads, the airlines and the Post Office are going the rounds in a controversy over 'priority' mail. **p.12**

New cars move coil steel for C&O-B&O

The 200 units, designed by Evans Products, feature increased capacity, hydraulic cushioning and lift-off covers **p.16**

Coming on diesels: silicon rectifiers

The solid-state devices, which have proved themselves in PRR service, soon will be applied to diesel-electrics **p.18**

Foam panels provide heads-up beer moves

Five inches of insulation throughout make North American's new reefer an ideal vehicle for hauling beer **p.22**

Retailing: Railroads can learn a lesson

AWR President Roddewig says the transportation industry can learn much from retail merchandising. **p.24**

The Action Page—Is education adequate?

One big piece of unfinished railroad business is to keep professional education abreast of progress **p.38**

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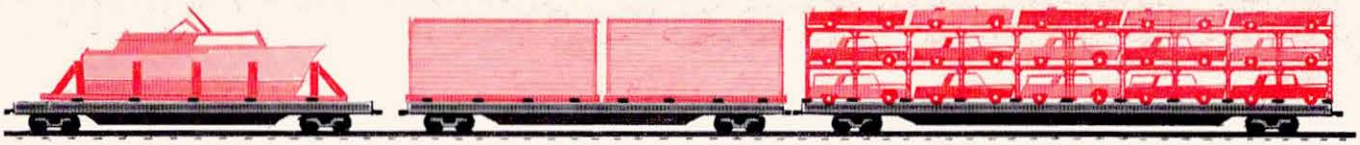

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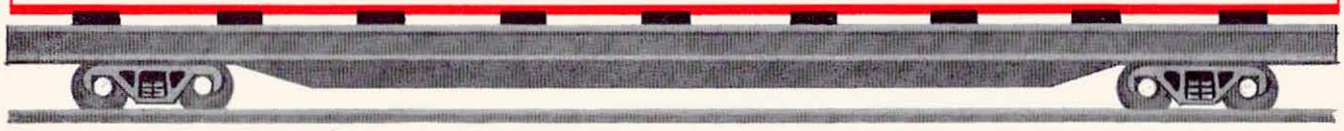

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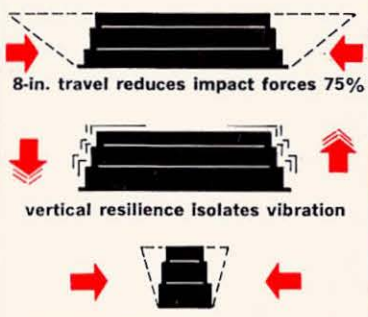

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SHORT AND SIGNIFICANT

Murphy and Bush confirmed for terms on ICC

The Senate last week confirmed President Johnson's reappointments of Rupert L. Murphy and John W. Bush for new ICC terms ending Dec. 31, 1971. Confirmation came one day after it had been recommended by the Senate Commerce Committee. The Committee's favorable action came despite the Railway Labor Executives' Association's presentation in opposition to Murphy. The presentation amounted to a complaint against various Commission policies and actions, including its case-by-case approach to railroad mergers, its administration of the safety laws, and its failure to impose labor-protection conditions in train-off cases.

•

1964 capital outlays now tallied at $1.5 billion

Final returns for 1964 are now expected to show that the Class I line-haul railroads last year made gross capital expenditures of $1.5 billion for equipment and road facilities. That's the showing of the latest ICC compilations. It indicates a 39.7% increase over 1963. The compilation also showed that first-quarter expenditures of this year were on a level 19.3% above those of last year's first three months.

•

Auto loadings up sharply

Railroads are rolling up new records this year in auto-rack-car loadings. The Pennsylvania's performance glowingly illustrates the trend. During the current model year (which started last Sept. 1), the PRR hauled 21,397 carloads of motor vehicles—compared with 10,637 in the corresponding period of the previous model year. In mid-March PRR set a new weekly record of 1,001 carloads (858 tri-level loads of 12 to 15 autos, 143 bi-level loads of 10 small trucks or station wagons).

•

New Jersey acts on transport authority

Although still not free and running, the on-again-off-again Tri-State Transportation Commission made up of New York, Connecticut and New Jersey, was a step closer to being a reality last week. The New Jersey State Legislature passed a bill to permit the state to join in the planning organization. The New York and Connecticut legislatures had twice approved the commission, New Jersey's rejected it both times. The present bill, however, calls for a commission with greatly limited authority "with purely planning purposes and purely planning powers."

•

1964: A record year for hotbox-free mileage

A performance of 1,175,689 car miles per hotbox setoff was achieved by U.S. and Canadian railroads for the entire year of 1964. This new high, an average of all AAR Mechanical Division records of individual railroads, exceeded the 1963 performance of 1,015,937 miles per setoff. In 1964, for the first time, each of the monthly averages exceeded the million-mile figure. During 1964 there were 27,744 bearing failures on freight cars which operated over 32.6 billion miles.

MONDAY MORNING REPORT

A big stake in stability?

How much of a stake does management have, either individually or as an industry, in the stability of the unions with which it has to deal? Quite a large stake, most observers would contend—but that point seems to have been opened up for debate again, in accusations leveled at the railroads by the Brotherhood of Locomotive Firemen & Enginemen.

Railroads—caught in the middle of a cross-fire

Immediate target of the BLF&E is J. E. Wolfe, chairman of the National Railway Labor Conference. Wolfe, addressing a management conference at Yale recently, called attention to the conflicting interests of union leaders and to the competition among unions. Railroads, he said, are caught in the middle when inter-union raiding takes place, and "we are virtually powerless to end this cross-fire." NRLC's chairman conceded that some people think inter-union problems are none of management's business. But, he countered, "it is our business when union battles with other unions threaten peaceful labor relations." His thesis: Now is the time for unions to settle their own problems and start pulling together, with each other and with management.

Criticism of the BLF&E—and a quick reaction

Wolfe singled out the BLF&E for a certain criticism. With the "possible exception" of the Firemen, he said, union leaders are starting to accept the premise that when men are not needed, unions must face up to the situation and adjust to it: "Even the Firemen's union, I feel, knows this is true, but the union hierarchy will not accept it." This one critical note may have had something to do with the reaction, and where it came from. In any event, three days after Wolfe had his say, the BLF&E had its.

BLF&E states its case—against the carriers

Management, a top officer of the union charged, has helped create dissension among the ops—with the aim of hindering the unions from merging into fewer (and stronger) organizations. BLF&E Assistant President M. W. Hampton went on to accuse the carriers of "unwarranted interference," and of "hypocrisy." Wolfe, he declared, "was one of the main architects of the split between the Engineers' and the Firemen's unions when he persuaded the leaders of the Engineers to accept a $1.50 per day increase for engineers who operate locomotives without a helper." Further, Hampton charged, "three eastern railroad presidents then secretly persuaded two of the operating unions to defect from the fight to preserve safe-crew laws . . . by signing so-called employee-protective agreements."

Carrier-union interests—more like than unlike

No one can say with any degree of certainty what will result (if anything) from this impromptu debate. It's perhaps significant that there has been no chorus of opposition to Wolfe's remarks from other major unions—only the solo voice of the Firemen. It may also be noteworthy that the carriers and certain other principal unions do seem to be working better together. And it probably should be taken into account that the BLF&E was the union hardest hit by the work-rules settlement, that the Firemen are deeply involved in a squabble with the Brotherhood of Locomotive Engineers. Whatever the factors involved, however, one point still stands out—the basic point, made by Wolfe, that now's the time for management and the unions to pull together. As has been said many times before, their best interests coincide far more often than they split.

Good news for railroads

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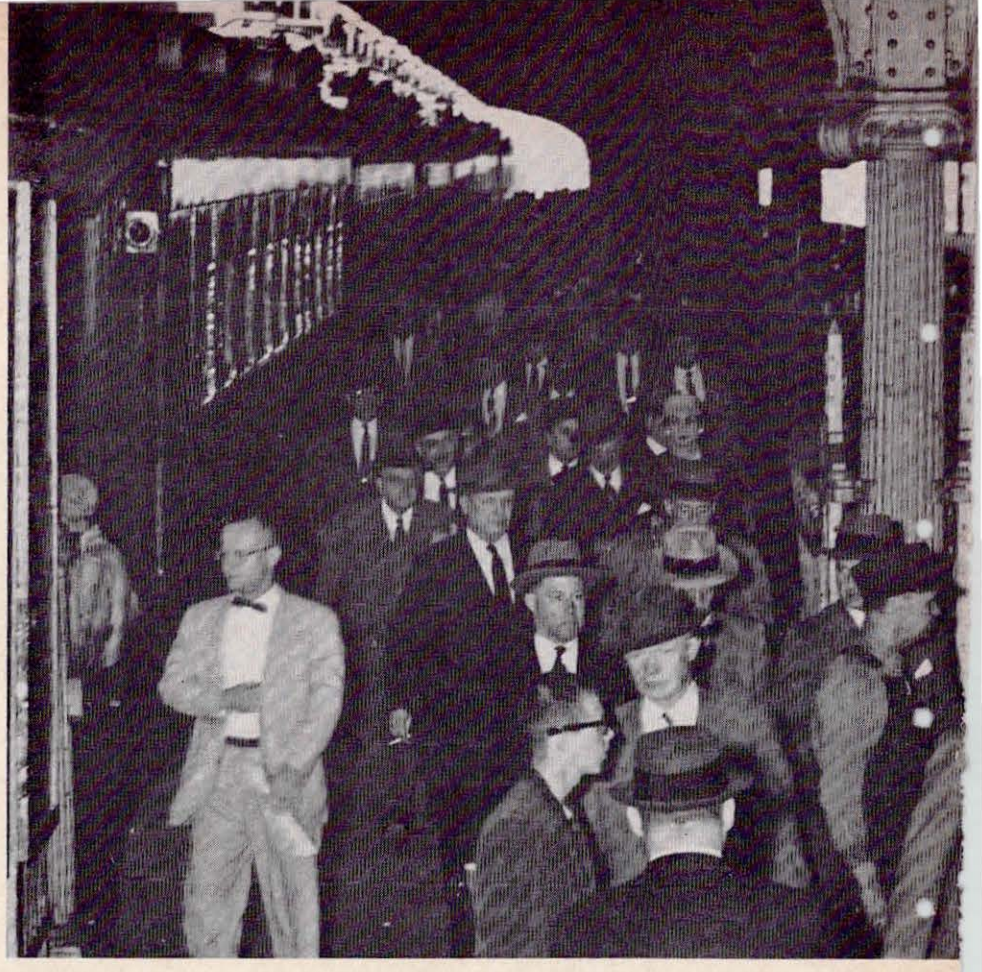
RAILWAY AGE WEEKLY
April 12, 1965



New hope for NJ commuter lines

The state has proposed a two-part plan to give financial aid to its struggling railroads. The package, costing some $56 million, involves a demonstration project.

While the plight of the New Haven's tottering passenger operations has been grabbing national headlines for the past few months, New Jersey's commuter situation has been quietly becoming almost equally as desperate.

Erie Lackawanna, which has been racking up an $8 million passenger deficit annually, has been making commuter abandonment soundings for some time. Its equipment is old and failing, and the $2.2 million the road receives from the state under a commuter-service contract has been called "wholly inadequate." E-L doesn't plan to renew its contract with the state when it expires Aug. 31.

The equally hard-pressed Jersey Central, whose passenger deficits run up to $6.5 million annually, has lost a staggering $63 million before fixed charges over the last 10 years. Last year the state paid Jersey Central $2.9 million for its commuter service. A big gripe of the railroad: it has had to pay back to the state some $31 million in taxes, and a good portion of the taxed property is used in commuter operations.

● **Relief on the way?** Last week, in his office in the state capitol at Trenton, New Jersey Gov. Richard J. Hughes called in newsmen to release the contents of a study of the state's commuter operations that he had just finished reading.

The 75-page study of New Jersey's railroad problems was made by the Division of Railroad Transportation of the State Highway Department. The report offered a plan that would:

—Establish a $5.8 million, 16-month demonstration project for making schedule and service changes to attract more passengers and hike revenues for the Erie Lackawanna.

—Create a $50 million fund—contributions to be shared by the state and federal governments—for a two-year railroad improvement program. The money would be used to make capital improvements on the E-L and other state railroads, and to reduce the lines' operating costs.

● **The E-L response.** Announcement of the plan by the governor took many people, including E-L Board Chairman William White, by surprise.

"It's rather difficult for me to comment on the report and recommendations because we have not seen the report, nor was anyone connected with Erie Lackawanna consulted with respect to it in advance. All we know is what we have read in the newspapers. We are glad to note, however, that state officials are aware of Erie Lackawanna's problems and have concern about the discontinuance of service."

White said E-L is willing to cooperate fully with the state on any plan that will solve the road's commuter problems.

"But our goal has been and must continue to be a permanent solution. Anything short of that will make very difficult, if not impossible, Erie Lackawanna's inclusion in either the Norfolk & Western or proposed Penn-Central System."

He added that if the Penn-Central

merger is consumated without E-L's inclusion in one of the systems, "Erie Lackawanna cannot survive for long. In that event, there would be no suburban or feight service."

● **Objectives of the plan.** Highway Commissioner Dwight R. G. Palmer said the plan would have two principal goals:

1. "Preserve and improve essential rail passenger service" while ending the present year-to-year subsidy program.

2. "Preserve the railroads themselves, and strengthen their ability to operate in a competitive atmosphere, so that the value of their role in New Jersey's industrial growth will not be lost."

New Jersey's plan, as now set up, depends on getting funds from the federal government promptly. It was reported, however, that sufficient state funds are available to assure continuance of E-L service until federal assistance is received, or until it is decided that consolidation of the lines under one operator is "the only ultimate solution."

The demonstration would begin July 1, being financed by $1.9 million in state funds that are already available in the 1965-66 state budget, and $3.8 million in federal funds. The money from Washington would be requested through the Tri-State Transportation Commission (a body composed of New Jersey, New York and Connecticut, and which is now in the organizational stage). The Federal Housing and Home Finance Agency would provide the funds. New Jersey also plans to apply for a share of the $375 million obtainable over a three-year period under the Federal Urban Mass Transportation Act.

● **The joint effort.** Gov. Hughes said the plan has a "unique concept" in that it involved cooperation between private industry, the state and federal governments, and citizens working in local communities. A Suburban Service Committee, named by the various counties in the Erie Lackawanna service area, would recommend service improvements and other changes aimed at getting more people to ride the trains.

The plan also proposed: elimination of certain taxes on the railroads; establishment of a retraining program for railroad labor affected by mergers or technological changes; and an agreement that after railroad facilities are improved in any municipality, the property be maintained locally.

If the demonstration project does come to be a reality, New Jersey's railroads—and the commuters who ride them—should know where they stand in the next 16 months. ■

How many firemen are out of work?

Labor and management figures don't agree as to how well released firemen have fared.

Everybody agrees that the ranks of the firemen have been cut deeply since railroads began applying the award of Arbitration Board 282. But there are, apparently, sharp differences of opinion as to how deeply the cuts have been and as to how the men who have been separated from service have fared.

At odds on both issues are J. E. Wolfe, chairman of the National Railway Labor Conference, and top officers of the Brotherhood of Locomotive Firemen & Enginemen.

● **How many left?** First, there's the point of "how many." Wolfe, speaking at a management conference at Yale, said that there were 37,235 firemen working in freight and yard service May 7, 1964, when the award went into effect—and that today there are 22,100. Three days after the NRLC chairman quoted his figures, the BLF&E—through Assistant President M. W. Hampton—made what appeared to be a challenge to the totals. Hampton charged that industry payrolls showed close to 27,000 men employed as firemen in January—and that Wolfe "apparently" ignored firemen in passenger service. The BLF&E challenge came despite the fact that Wolfe's comment specifically quoted the comparisons as applying to men "working in freight and yard service."

(Carrier and union spokesmen did agree, however, on the total number of firemen removed—about 15,000.)

● **What about the men?** Second, there's the matter of how well the men have adjusted to the fireman-off situation. Wolfe noted that less than 11% of firemen who had been removed from service are now on the unemployment rolls. He also pointed out (1) that the carriers had paid out about $30 million in severance, and (2) that the railroad's unemployment system "is so generous that the vast majority of the working firemen who were removed would still be eligible for benefits averaging $51 a week if they still were out of work."

The BLF&E—perhaps coincidentally—made its own estimate of the unemployment situation on the day before Wolfe spoke at Yale. According to Firemen's President H. E. Gilbert, about 30% of the firemen removed from their jobs as a result of the award are still unemployed.

While Wolfe called the 11% figure one of the most heartening statistics of the whole affair, Gilbert termed his 30% figure "disturbing . . . a sad commentary on the human-interest aspects of compulsory arbitration."

● **RRB has a figure.** Figures from the Railroad Retirement Board support Wolfe's estimates on percentage of unemployment. As of March 24, RRB figures show, 1,777 firemen were drawing unemployment benefits—1,077 as a result of the arbitration award and repeal of full-crew laws and 700 for other causes (seasonal furloughs, strike benefits and so forth).

The BLF&E, however, also challenged RRB reports—on grounds that the board's statistics account only for those men eligible for unemployment benefits. Said Gilbert: "those who have been fortunate in finding employment have had to search for more than three months before finding a job. Many of them were not eligible for unemployment compensation because of short tenure of service."

The BFL&E president said his estimates came from reports from 1,000 firemen in all categories under the arbitration ruling.

Gilbert also contended that "men with more than 10 years' service were supposed to be fully protected on seniority and earnings by the arbitration ruling. However, we find that nearly 50% of the men remaining in service have been forced onto less desirable jobs and have suffered severe cutbacks in wages."

● **BLF&E vs carriers and BLE.** The BLF&E president concluded his counter-attack with a blast aimed at both the railroads and the Brotherhood of Locomotive Engineers. The arbitration award provided for a joint carrier-BLE-BLF&E study of experience under the fireman-off provisions. But, Gilbert said, "management representatives together with the grand chief engineer of the BLE have virtually ignored the instructions of the arbitration award. More than once, Mr. Wolfe . . . has called publicly for cooperation on the part of labor and management, but when it comes to an actual meeting, we get a polite brushoff instead of meaningful cooperation." ■

Mail choice to be stamped out?

The Post Office proposes to merge air mail and first-class surface mail into a new 'priority' mail class. But the railroads charge the plan would end the public's freedom of mailing choice.

The question of the public's freedom of choice to put a 5-cent stamp or an 8-cent stamp on a letter emerged as a sticky issue last week in a hassle involving the airlines, the railroads and the Post Office Department.

The controversy has arisen over a proposal by Postmaster General John A. Gronouski that airmail and first-class surface mail be merged into a new class called "priority" mail. Congress would be asked to set up the new priority class.

Under the proposal, the Post Office would move intercity priority mail by the fastest means available. Thus, railroads and trucks would still handle short-haul mail, but much of the mail moving 100 miles or more would go by air.

• **Airlines' resolution.** The Air Transport Association's board of directors has adopted a resolution pledging the airlines' "assistance and cooperation in carrying out this concept."

The airline group, in supporting the Postmaster General's proposal, said airlines could give overnight delivery to 7.4 billion letters a year—two and a half times the present volume carried by air. Gronouski has said that his aim is to have his mailmen deliver 95% of all first class mail overnight anywhere in the nation.

• **The railroads answer.** Philip A. Hollar, vice president and assistant to the president of the Association of American Railroads, said the airlines' backing of the elimination of air mail as a separate classification "failed to offer any substitute for the freedom of choice now available to users of the United States mails."

He noted that the airlines estimate that the plan would increase mail volume by air two and a half times, and added:

"But the airlines' desire to increase their air mail profits should not be satisfied at the cost of the freedom of choice—a 5-cent stamp or an 8-cent stamp—which users of the U.S. mails now enjoy.

"Their exercise of this freedom of choice, furthermore, now shows a 15-to-1 preference for the 5-cent first-class stamp over the 8-cent air mail stamp on mail for non-local delivery.

"The airlines also fail to say whether they propose to haul this additional mail at the present rate for air carriage of first-class mail—an average of 19 cents per ton-mile—or would expect to receive the 38-cent average rate they now enjoy for air mail."

Hollar said the airlines also never explain why they "still balk over any user charge at all for jet aircraft use of the airways for hauling mail, express or freight—airways that cost the federal government $749 million a year."

The railroads now earn about $342 million a year for carrying mail; the airlines some $108 million. ■

CN'S RAILTAINERS slide sideways from rail car to truck.

New CN container service

A new type of road-rail container is now being used by Canadian National for express freight service between the Maritimes and Montreal.

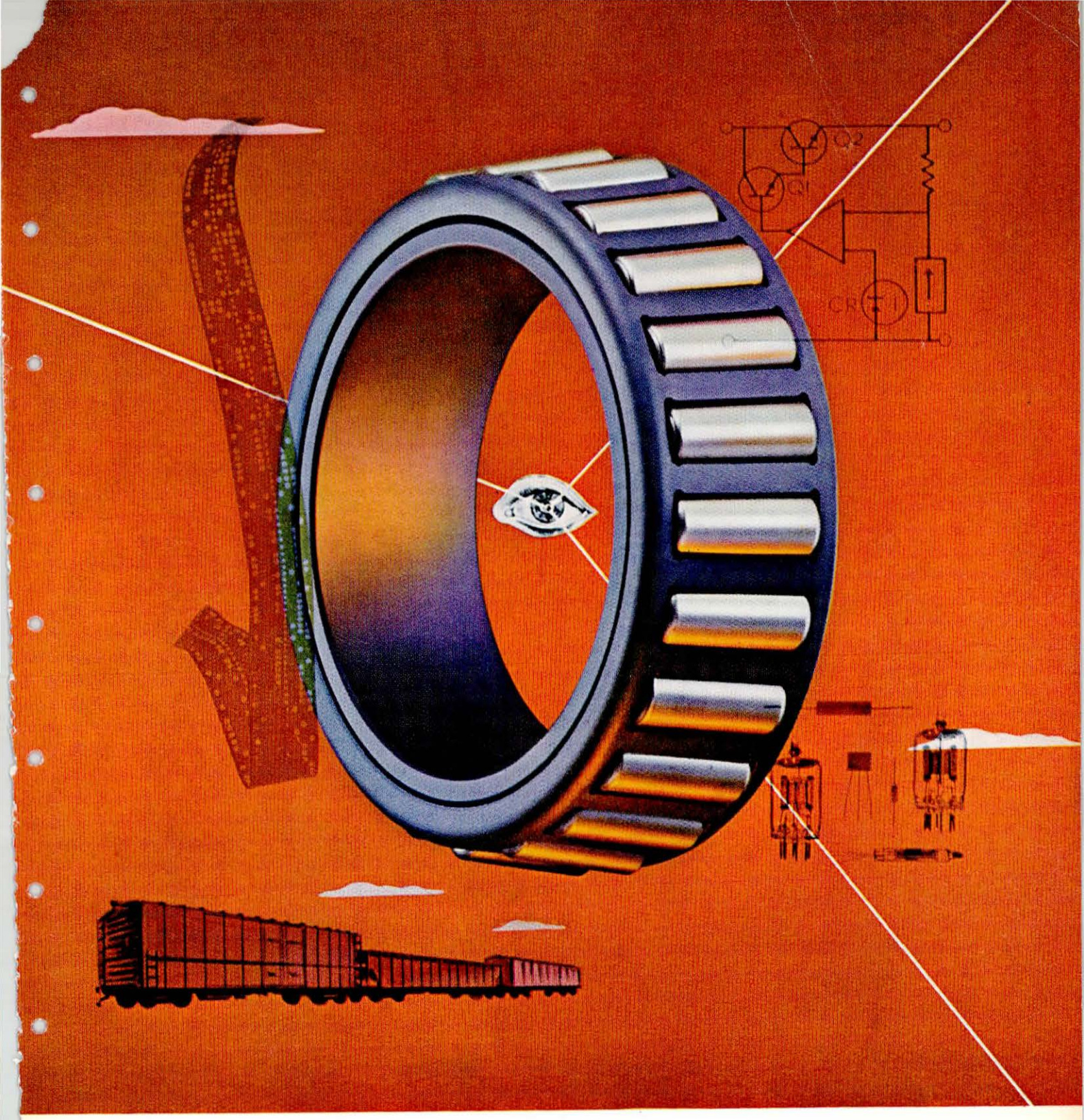
Known as Railtainers, the 20-foot-long aluminum units are insulated and have built-in heating devices. They can be transferred easily between train and truck, eliminating unnecessary handling of shipments and speeding up pick-up and delivery service.

The containers, built by Steadman Industries, ride on specially adapted flat cars. At destination, a truck gets into position alongside the car and hydraulic arms on the truck reach under the containers and pull them sideways onto the truck body.

The truck is then ready to begin delivery of the container's contents, and the train, without having had to switch cars, can continue its trip. Outgoing express freight containers are loaded on the trains in the same way.

Containers can also be taken off the trucks and parked on detachable legs. This frees the trucks while containers are being loaded or unloaded or awaiting transfer.

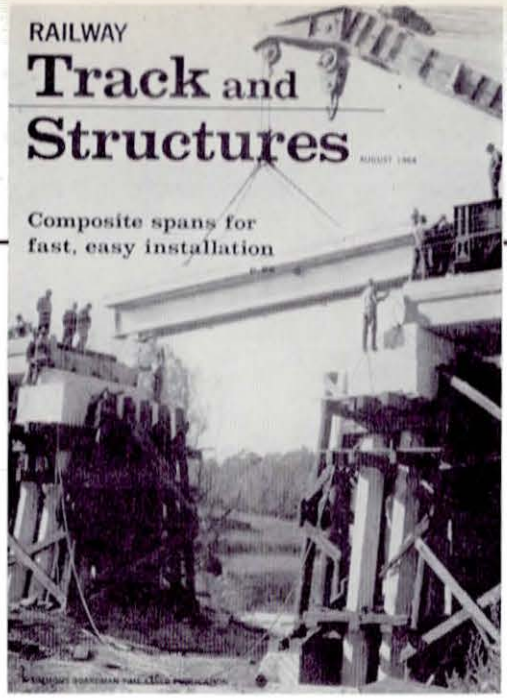
CN has inaugurated the service on two trains, using 10 modified flat cars, 22 containers and two trucks equipped with hydraulic arms. Service is now between Montreal, Bathurst and Moncton, and later will be extended to Newcastle, Rimouski and Mont Joli. ■



In this new era in railroading...

Brenco *crown-taper* roller bearings are the most modern of all.

BRENCO, INCORPORATED
PETERSBURG, VIRGINIA



READING TIME per page— how RT&S shapes-up

Here's the real test! Average reading time devoted to each page of advertising or editorial. The figures? 56 seconds for RAILWAY TRACK AND STRUCTURES compared to 29 seconds for the competitive monthly.* Readers gave almost twice the attention per page to RT&S as to the other magazine.

Reader interest is keen (paid subscription renewal rate is 82.56%). RT&S is the only railway business publication edited exclusively for the men in the engineering and maintenance departments of the railroads.

** Compiled from data furnished in a survey by the competitive monthly. Figures based on January-April, 1963 issues.*

Ask your Simmons-Boardman representative for detailed information — including the joint advertising rates available on space used with Railway Age, Railway Locomotives and Cars, Railway Signaling and Communications and Railway Purchases and Stores.

RAILWAY TRACK & STRUCTURES

SPECTACULAR TRAIN WRECKS heighten the drama in "The Train," a story of a World War II deception.

Movie wrecks are better than ever

If Academy Awards were presented to inanimate objects, a strong contender for one next year would be a hissing-and-hooting veteran of the French railways.

The ancient-vintage locomotive and 35 cars play the title role in "The Train," a movie that's now highballing across theater screens around the country. The film's dramatic painting of the steamy, sooty world of rolling stock, signal towers, yards, shops, cranes, tunnels, bridges and track is enough, critics say, to fire up even the most passive viewer.

Based on a real incident, the movie stars Burt Lancaster as an heroic French Resistance trainman who's out to keep his trainload of precious French art from being shipped to Nazi Germany. The underground undertakes an immense deception to outwit the Nazis, creating wrecks, changing station signs, and tearing up rails to literally keep the train running around in circles.

● **Behind the scenes.** Shooting on "The Train" began in Aug. 1963 in the St. Ouen railroad yards in Paris. Director John Frankenheimer assembled 25 tanks, 500 extras and French Army personnel dressed in German uniforms, the 35-car train, some additional railroad rolling stock and a large amount of mechanized military equipment.

At the Vaires yards, some 40 miles out of Paris, the actors got a chance to become familiar with the railroad equipment they would be operating.

One of the most spectacular railroad crashes ever filmed was staged at Acquigny. Families living across from the town's railroad station were evacuated, and all electricity and gas in the area was shut off during shooting. Railroad experts feared that the fired-up boiler of the locomotive that was to be crashed might explode. Special pits were dug along the rails to catch the runaway engine.

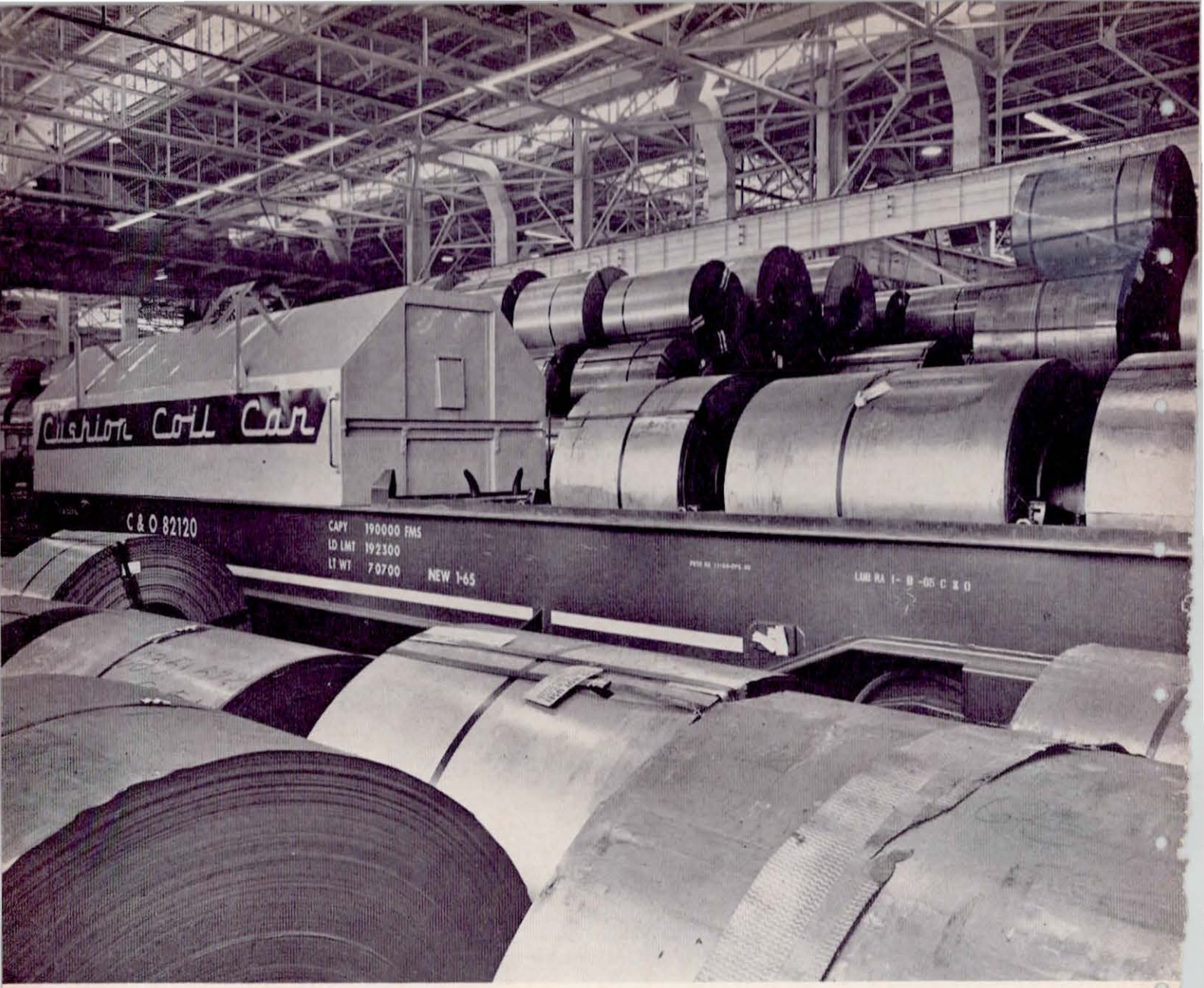
Seven cameras were mounted at various vantage points to record the charge of the locomotive barreling down the track at 60 mph and crashing into a derailed train (see photo).

● **The 'million dollar minute.'** To recreate the destruction of the Vaires rail yards by Allied bombers, movie crews and French Army demolition experts spent six weeks setting up explosive charges. They distributed nearly two tons of TNT and dynamite and some 2,000 gallons of gasoline throughout the rail yard.

On signal, 140 individual explosions were set off in just over 50 seconds to simulate the air bombing. Nine cameras in bunkers filmed the scene. Estimated cost of the sequence if shot in Hollywood would have been about $1 million.

Critics have been impressed with the authenticity of this drama of the high iron. A comment from Director Frankeinheimer may explain why: "There are no tricks in this picture. When trains crash together, they are real trains. There is no substitute for reality." ■

NAZI MEETS RESISTANCE: Paul Scofield, left, and Burt Lancaster.



New cars move coil steel

Cushion underframe, expanding DF bars and lift-off covers are features of 100-ton units; 200 have gone into service.

Two hundred new coil-steel-carrying cars have just gone into service on the Chesapeake & Ohio and the Baltimore & Ohio. Among the features of the new cars are

—Increased capacity;
—Hydraulic cushioning;
—Lift-off covers.

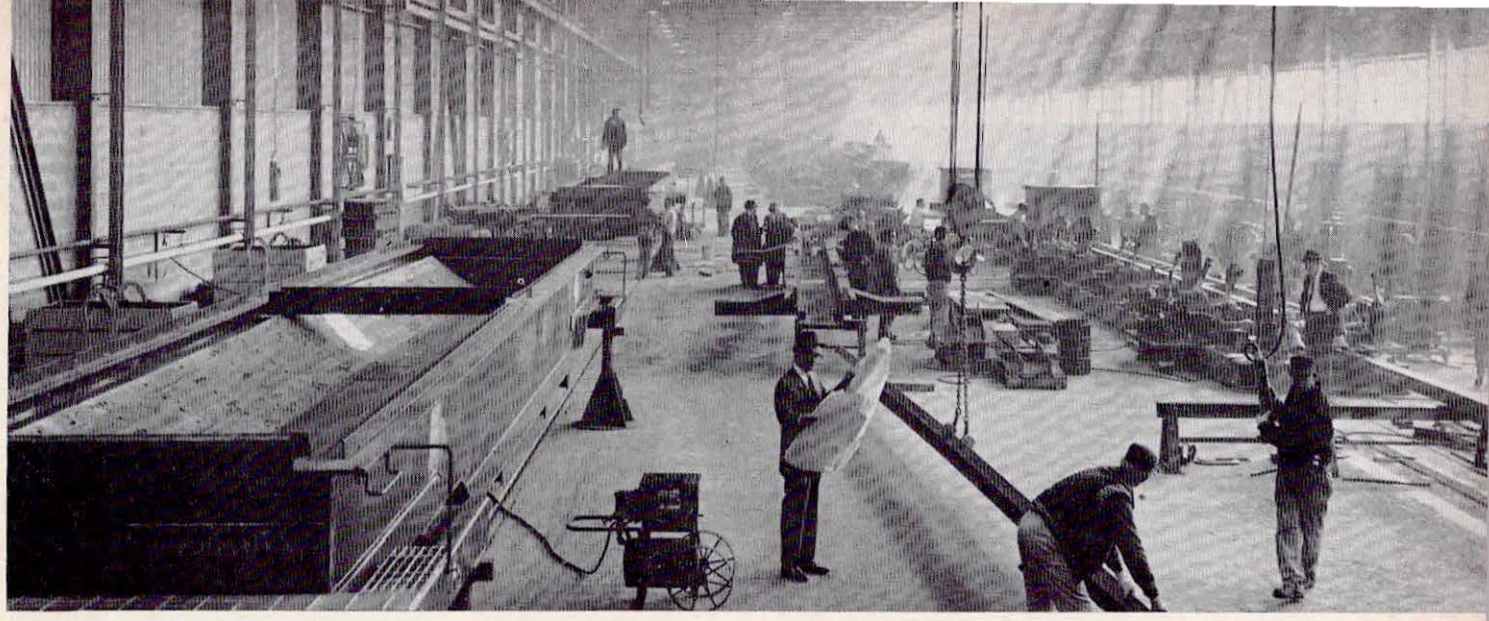
A lading trough, in which the coils of steel rest, extends the entire length of each car. Special expanding DF bars separate the individual coils.

The 20-inch-travel Hydra-Cushion underframe and the special DF bars were chosen to prevent damage to coil edges. The 100-ton capacity, compared with 70 tons for earlier cars, is proving attractive not only to the two railroads, but also to their customers.

● **Completed at Raceland.** The car, designed by Evans Products, is designated as its DF-C model. Evans built the bodies of the cars in its new car-building plant at Plymouth, Mich. The bodies were then shipped to the C&O shop at Raceland, Ky., for completion. The order for 200 bodies represented the first production at the new Evans plant. Assembly lines there have since turned out 50 more DF-C cars, ready to run, for the Grand Trunk Western.

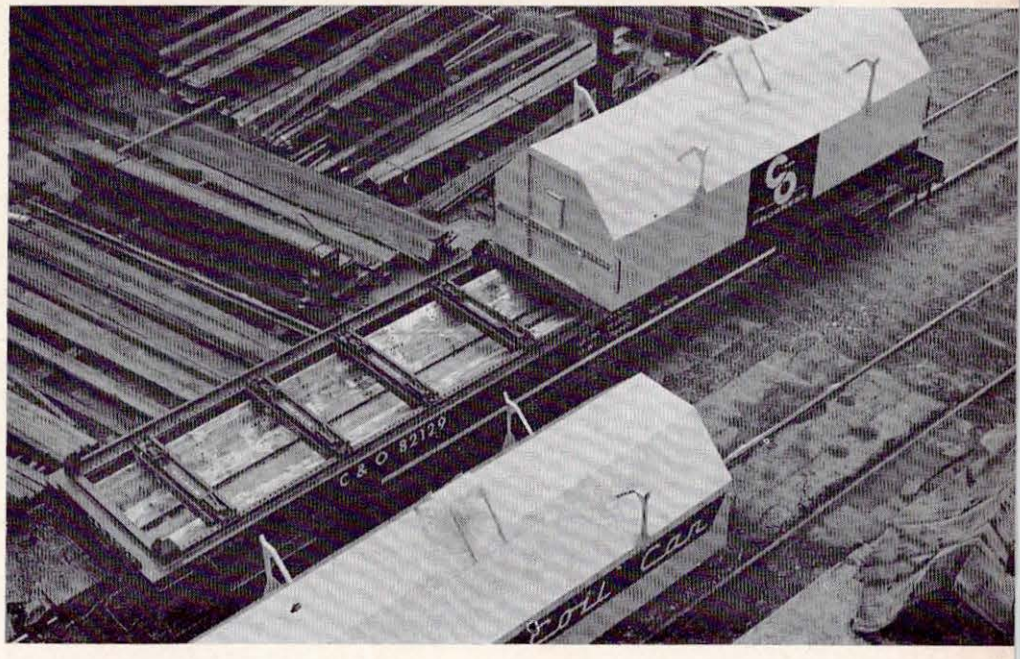
The simplified handling and elimination of expensive packaging for coiled steel which have been possible with specialized freight cars have done much to prevent erosion of this traffic in recent years. Railroads' early emphasis in the design of such cars was on weatherproof arrangements and ease of loading and unloading by customers. Much work has been done recently, however, on the cushioning of coils to prevent damage in transit.

● **Cushioning is popular.** A number of recent coil-car designs have incorporated hydraulic cushioning of the entire carbody. The new B&O-C&O



Meeting today's traffic demands

Unloading of one of the first of the new cars proceeds at Fisher Body plant in Grand Blanc, Mich. (left) while last of the bodies roll off Evans production line at Plymouth, Mich. (above). Evans-built components were shipped to C&O Raceland, Ky., shop for assembly in car. Following painting, the expanding DF bars were installed (right). Car weighs 65,000 pounds.



for C&O–B&O

cars are examples of one of two such designs produced by Evans. The other is the "breadbox" version of the car, covers of which are not removed by a crane but are opened by a hand crank, remaining at all times hinged at the side sills (RA, Aug. 31, 1964, p. 63).

The heavy side sills give the new B&O-C&O car an almost gondola-like appearance. It is classed, nevertheless, as a flat car—AAR designation FMS. The two loading troughs, each 22 feet 1 inch long, are formed by a permanent channel extending across the car at the center line. Each of the cradles, lined with heavy wood decking, can accommodate large-diameter steel coils. Eight DF bars, adjustable in holes at the tops of the side sills, serve to separate individual coils. The bars, a variation of the standard DF design, are arranged to expand so they will fill the spaces between adjacent steel coils. This patented cross-member was developed by Evans engineers.

● **Integral lading trough.** The lading trough is produced by the car's structure, integral with the underframe. The center sill of the car is a pair of Zee sections separated by a top cover plate so that a sliding sill of conventional sections may be installed inside. The 20-inch Hydra-Cushion unit is on the car's center line. Side sills are wide-flange beams. Bolsters, crossbearers and crossties in the car's structure are all designated and installed to produce the trough which forms the lading cradle.

The skeleton structure of the car is closed with 2⅜-inch wood decking bolted to underframe cross-members.

● **Large diameter coils.** The covers, designed by Shunk Manufacturing, are of light-steel sheets. Height and width of each cover permits the handling of coils of 84-inch diameter. Each cover is 23 feet long, 8 feet 2½ inches over the stacking brackets, and weighs 3,200 pounds. A weather seal (a steel strip welded vertically along the side and end sills), extends up inside the covers.

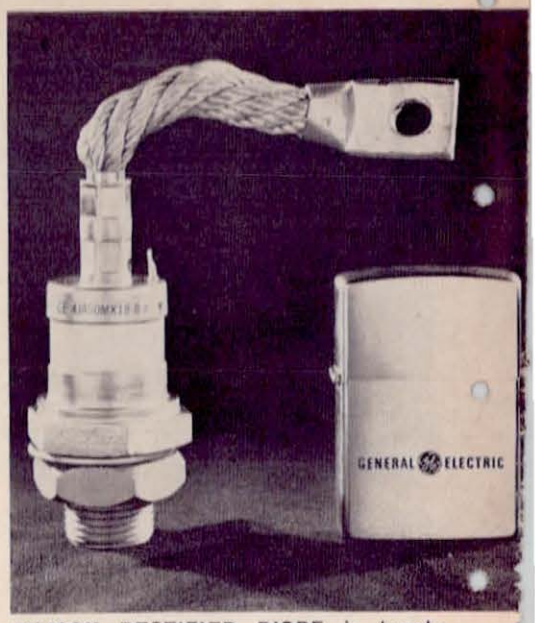
Trucks are Barber S2A 100-ton design with 2½-inch spring travel, 6½- x 12-inch roller bearings, and 36-inch one-wear wheels. The car has ABD brake equipment and Wabcopac brake assemblies with composition shoes.

The car is 55 feet 2 inches long, over coupler pulling faces and 52 feet 6 inches over couplers. Truck center distance is 36 feet 7 inches. Height over side sill is 5 feet 4¼ inches; over cover top, 11 feet 3⅝ inches. ■

SILICON RECTIFIERS

Pennsy electrics point the way

Use of solid-state electrical devices on the road's m-u cars and electric locomotives has paid off. Builders will soon be applying the silicon rectifiers to diesel-electric locomotives.



SILICON RECTIFIER DIODE is barely large enough to make a handful.

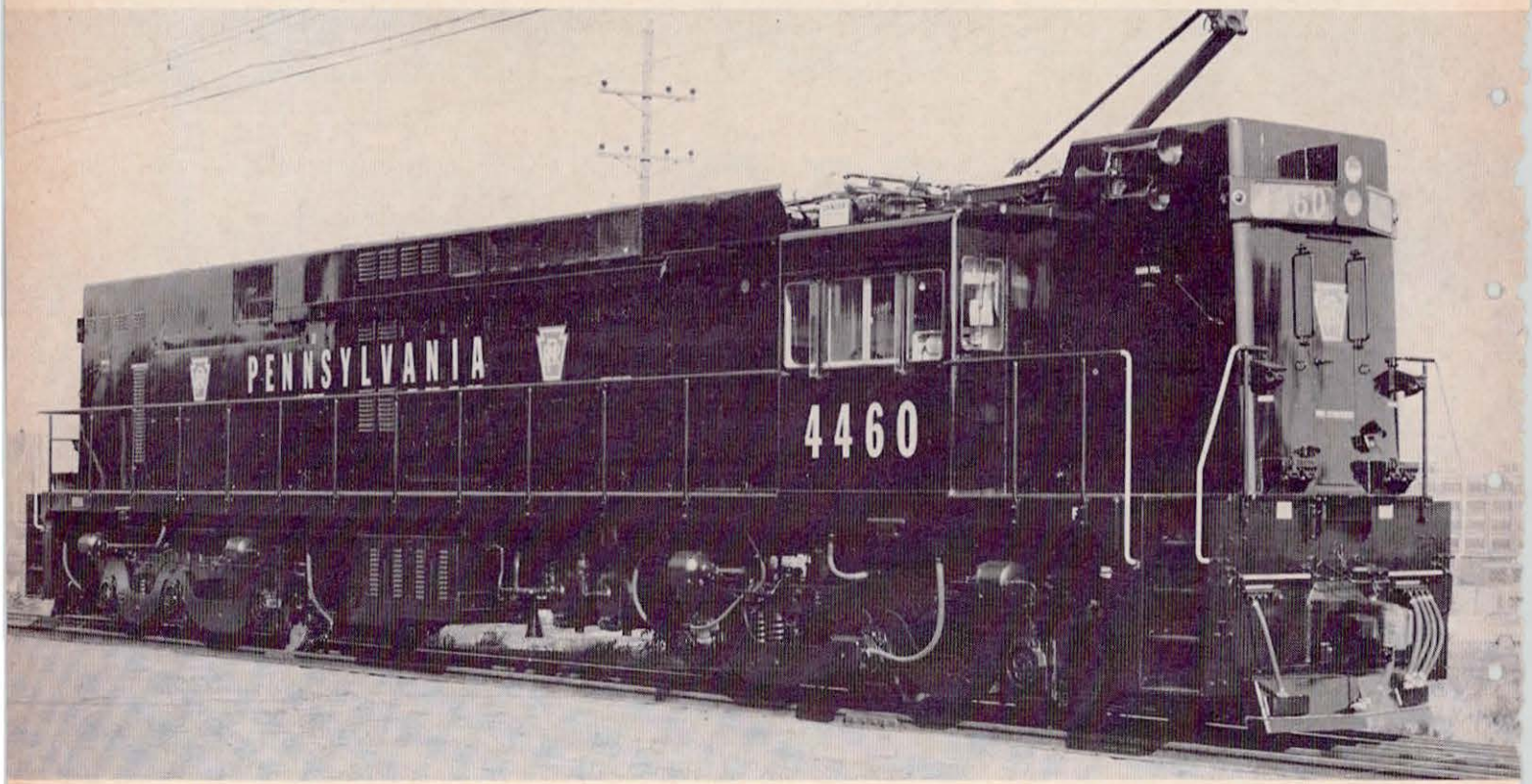
A major change in the diesel locomotive's electrical transmission will be introduced this year.

The new designs will have higher-horsepower engines driving alternating-current generators (alternators), instead of the usual direct-current generators. They will have silicon rectifiers to change a.c. current into direct current for the d.c. traction motors. Silicon rectifiers are solid-state devices belonging to the same electronic family as transistors.

• **PRR performance record.** Since 1962, the Pennsylvania has operated both multiple-unit cars and 4,400-hp electric locomotives equipped with silicon rectifiers. The solid-state electrical devices, both as rectifiers and control equipment, are setting a remarkable performance record on the road's electric locomotives and motor cars.

The PRR has in service 66 new locomotives which receive alternating cur-

This is the type of equipment on which silicon rectifiers have been



Eight PRR electric locomotives like these already have silicon rectifiers. The remaining 58 units may also get them.

rent power from the overhead contact system and use it as direct current in the motors. Sixty of these were equipped originally with ignitron (mercury-arc) rectifiers (RA, Nov. 7, 1960, p. 18) and six with silicon rectifiers (RA, July 16/23, 1962, p. 17). Now two more have been changed to silicon rectifiers. Consideration is being given to applying them to all locomotives at the end of the useful life of the ignitrons.

PRR also has in service 38 multiple-unit electric cars employing silicon rectifiers and static control, representing the most advanced development. The control consists basically of 29 control cards, two current measuring reactors and two phase-controlled ignitron rectifiers which provide static, stepless acceleration. These two rectifiers are for control only and act as voltage valves.

● **Power conversion.** The power-converting silicon rectifier diodes of the m-u cars are each small enough to make only a handful. Each is rated 250 amperes and 600 volts at temperatures below 135 deg. C. Each of the 384 power-converting diodes of the electric locomotives has the same rating. Each of the three bridge circuits on a car consists of 24 silicon power diodes, six in each leg of each bridge. They are air-cooled. The water-cooling equipment, which is necessary for ignitron rectifiers and which is bulky and difficult to maintain, is eliminated. They require no firing circuits and have no highly damaging arc-backs. Based on steel-mill operation, the efficiency of a mercury-arc rectifier is 91% and that of a silicon rectifier is 97.2%.

Master controller

Each car vestibule is provided with a master controller with a main handle and the customary dead-man feature. Operation of the cars is such that the motorman needs only to select the controller handle position to obtain the desired final speed, or set the brake handle for the desired braking speed.

● **Speed control.** There are four different running positions on the master controller. The first position is intended for short movements of the car, such as spotting for maintenance or storage, or in making up trains. Maximum acceleration in this position is one-half of the normal rate and top speed is limited to about 25 mph. In the second position, normal acceleration can be obtained. Top speed is limited to the output of one of three transformer windings. Similarly, the third position restricts speed to the output of two transformer windings and the output of all three is available in the fourth running position.

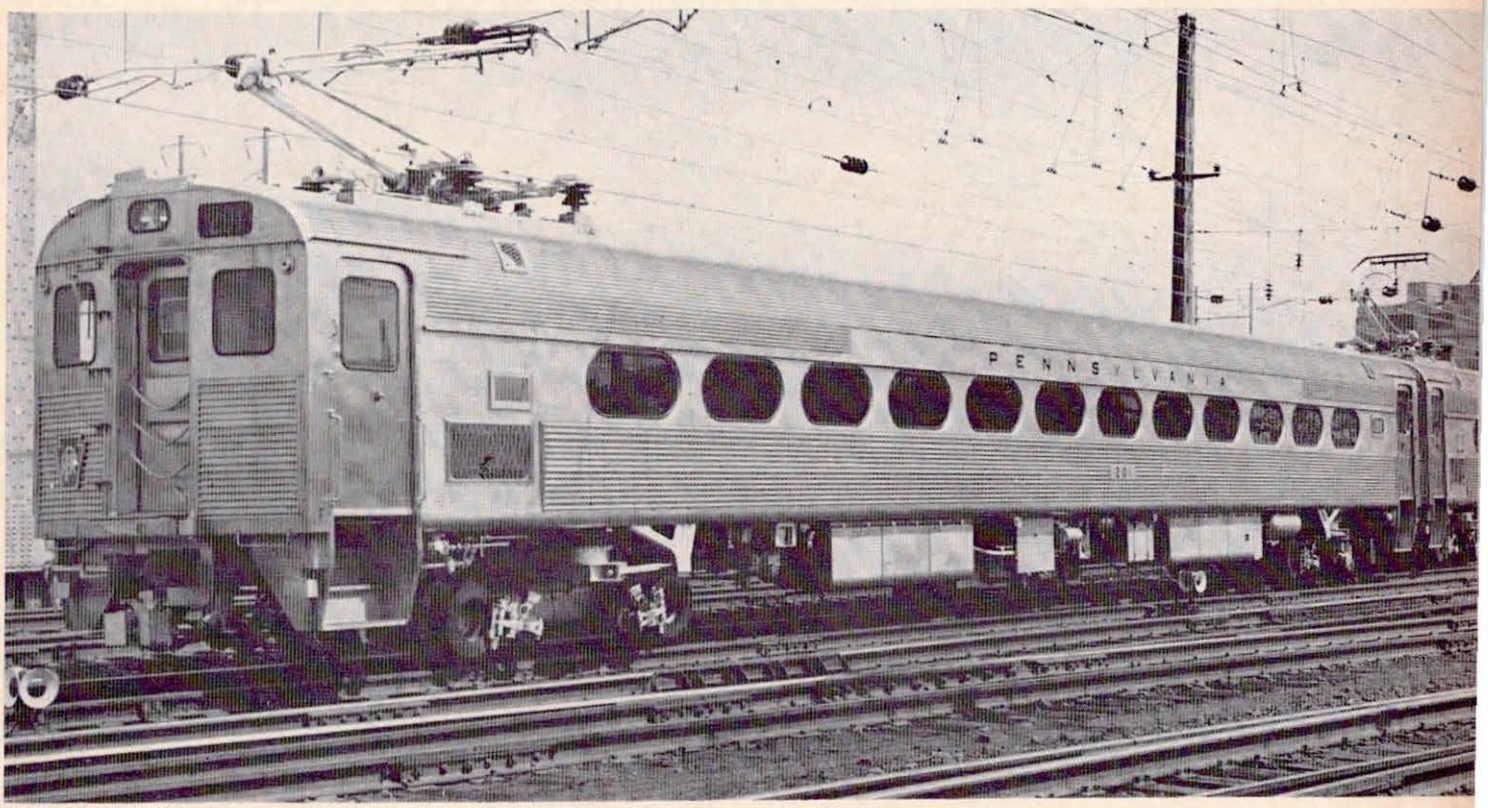
The 29 card-control panels on each car are operated in conjunction with approximately 26 different control circuits. All static components are carefully adjusted and sealed with epoxy coatings to insure no change in settings.

● **Maintenance.** The railroad holds two sets of 29 control cards for the maintenance of 38 cars. They may be replaced simply by pulling one out and replacing it with a spare. Control card failures have been insignificant. Since the installation of the cars in 1963 it has not been necessary to change-out a power diode.

The wide voltage range and stepless control on the m-u cars makes motor transition, motor shunting and transformer tap changing unnecessary. This reduces spare-part requirements and also eliminates a source of maintenance costs.

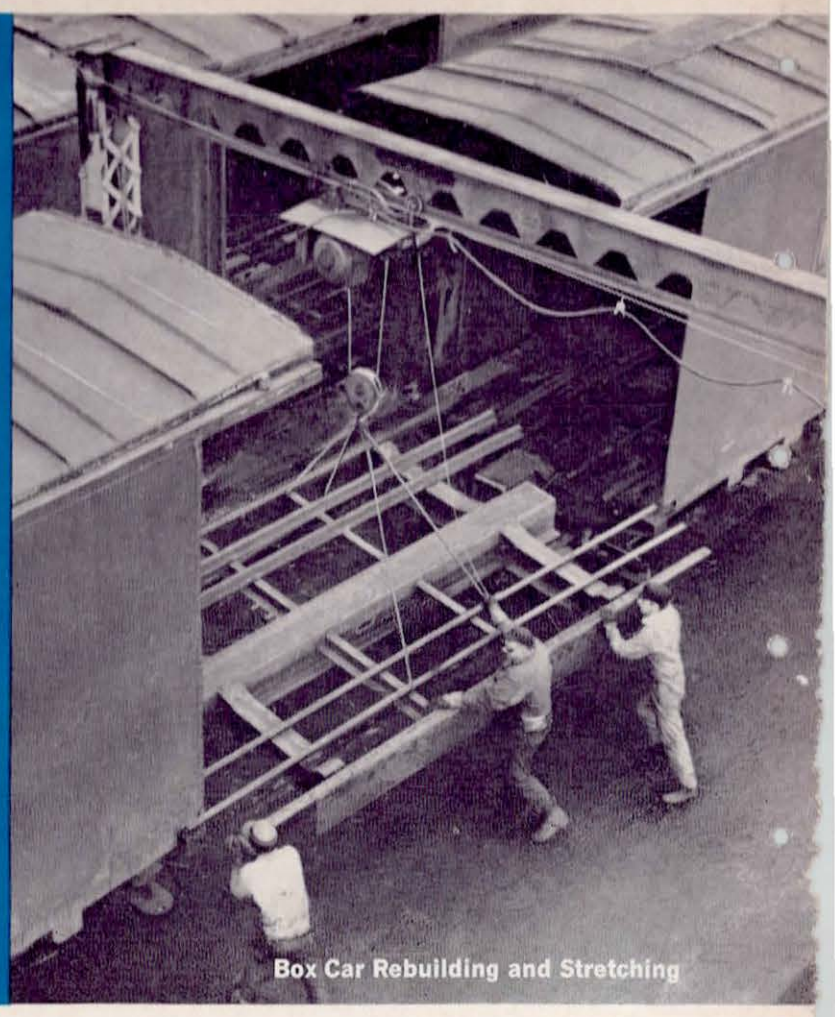
On locomotives, the failure of mercury-arc (ignitron) rectifiers was six times as high as on those with silicon rectifiers. Failures on the latter have been due to cooling air and balancing circuit problems, which have been corrected. ■

establishing noteworthy performance records



Thirty-eight of the Pennsylvania's multiple-unit electric cars are equipped with silicon rectifiers.

Remanufacturing Freight Cars?...


Box Car Rebuilding and Stretching

P-S Parts and Service offers you a wide range of help to make your program a success.

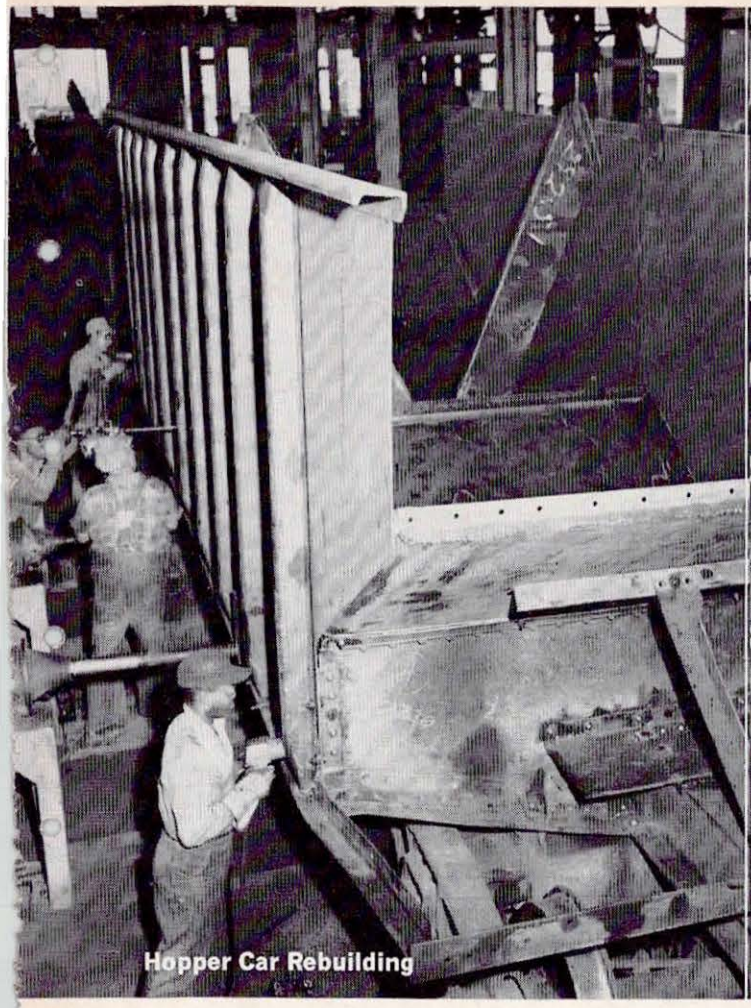
Are you planning to remanufacture, upgrade, convert or stretch out service-worn freight equipment? More and more service and economy minded railroads are doing just that. And many are looking to Pullman-Standard for the kind of help that insures the success of their programs. Four areas of assistance, based on proved experience, are available through the P-S Parts and Service Department:

1—Engineering: With Parts and Service orders Pullman-Standard can work with you to study and assist in organizing your needs. P-S parts can be adapted or developed to fill those needs. And P-S engineers can usually recommend application or assembly procedures to help you obtain maximum efficiency and economy in your rebuilding programs.

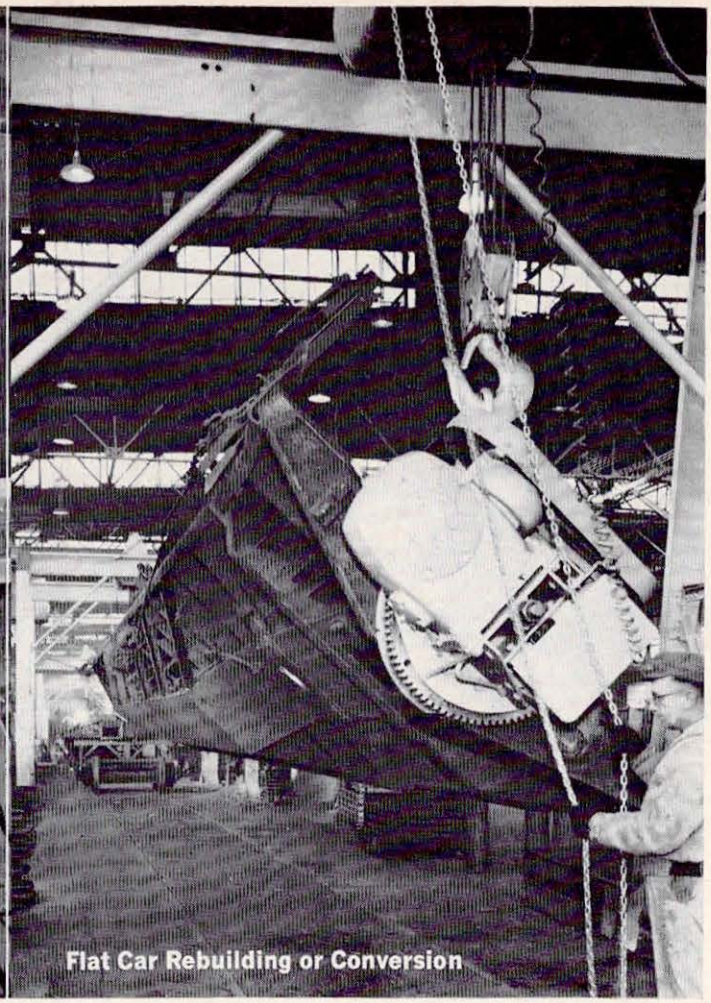
2—Production: If yours is a large P-S parts order for rebuilding to be done in your shops, P-S can furnish experienced personnel to work with your staff at the start of your program. In this way your personnel receive the benefits of P-S production methods and assembly experience. Additionally, with such orders, photographs and drawings of special application tools can be made available as additional help for your mechanical department personnel.

3—Responsibility: Pullman-Standard is noted for its readiness to stand behind all its products, including parts. Not only are P-S parts precision made, they are backed up by Pullman-Standard's reputation for dependability and responsibility.

4—Delivery: The intricate logistics of a railroad shop rebuilding program is a special P-S skill. Working with your organization, P-S can see to it that the parts needed are supplied to coordinate with your rate of utilization . . . whether that rate is fast or slow.



Hopper Car Rebuilding



Flat Car Rebuilding or Conversion

Rely On Proved Experience! The Pullman-Standard Parts and Service Department has a long and impressive record of freight equipment rebuilding . . . proved experience you can rely on. Work can take place in customer shops or within Pullman-Standard production centers. Here are some reasons why you can have confidence in P-S abilities:

Box Cars: P-S can supply a complete range of parts and services for box car rebuilding and "stretching" in P-S or railroad shops. And your box cars can be insulated, converted to greater ton capacities or given end-of-car cushioning.

Hopper Cars: P-S has wide experience in providing parts for complete remanufacture of hopper cars, rebuilding with new P-S parts from center sill up. Fifty-ton open hoppers may be rebuilt or converted to 70-ton cars. Open hoppers may be converted to covered hoppers with new P-S trough hatch roofs. Or, small parts, from hopper door frames to corner caps can be supplied for your rip track operations.

Flat Cars: P-S shops have broad experience in flat car rebuilding, "stretching" and conversion. Flat cars have been programmed for heavy rework and repairs, as needed, from the roller bearings to rub rails. And, P-S converts flats from auto rack to trailer service, from piggyback use to pipe-hauling or other special services.

You will find P-S rebuilding services most beneficial and productive of important economies if you call for them in the earliest possible stages of your program's development. Merely contact us for full discussion of your needs.

PULLMAN-STANDARD

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LEARNED TO PROGRESS
P R I
MEMBER

BEER STEIN ON WHEELS

New insulated cars enable brewery to ship its product without heaters during winter and without icing in the summer months. The cars have 10-foot plug doors.

Foam panels provide heads-up beer moves

Five-inch insulation in North American's new refrigerator car keeps kegs cool, eliminates metal contact outside to inside.

North American's new polyurethane-insulated refrigerator car has met all temperature and safe shipping requirements in test shipments of keg beer. It has been service tested by the Theo. Hamm Brewing Co., St. Paul, Minn.

● **First of 50 cars.** The 70-ton, 4,374-cubic-foot unit, first of a 50-car order to be leased to Hamm, was assembled at North American's Chicago Ridge, Ill., plant. It features Landreth pre-molded urethane foam panels on the sides, ends, doors, floor and roof, and Evans load dividers.

"One basic feature of these cars which makes them so ideal for use by Hamm is the five inches of insulation throughout which protects the beer during shipment," says Mike Tamisiea, Hamm's general traffic manager. "With this car, we are now able to ship beer without heaters during the winter and without icing the cars during the summer. Other benefits include standardization of equipment and free movement of pallets."

● **Car is pre-cooled.** In one six-day test, the car was loaded with 94,224 pounds of keg beer for shipment from St. Paul to Denver, Col. Two-inch insulating blankets were placed over the lading. Recording thermometers were installed under the blankets at the A and B ends of the car. After loading, the car was blast-chilled with 500 pounds of dry ice.

At time of loading, the temperature was 82 degrees outside and 77 degrees inside. When loading was completed, the temperature was 85 degrees outside and 79 degrees inside. Outside temperatures en route ranged from the mid 70's to mid 90's, with an extreme of 98 degrees at Denver.

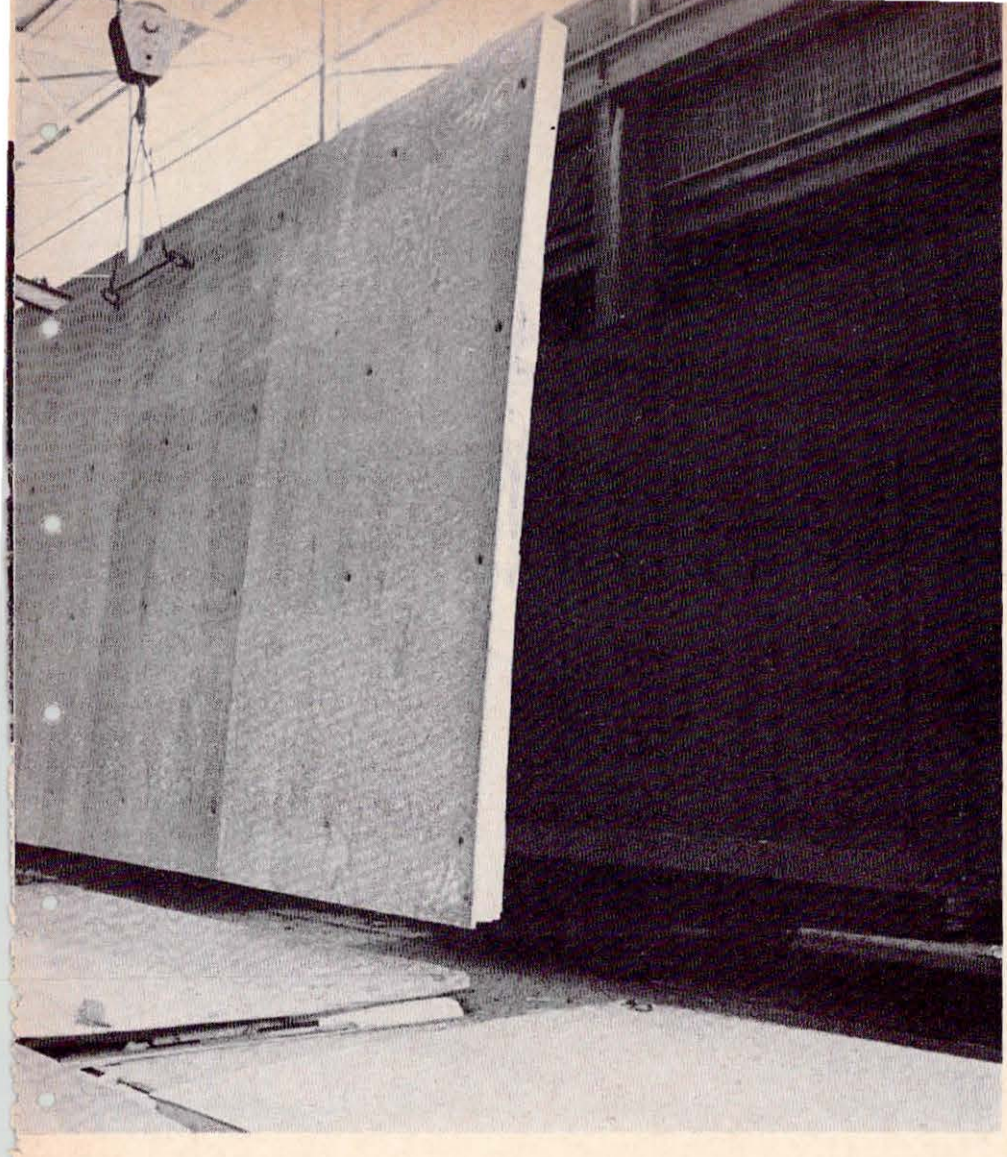
The car was not unloaded until the second day after it arrived in Denver, because of lack of cooler space. The distributor reported the car arrived in good condition without any load shift and with no leakers. The doorway of the car was loaded with 123 half-barrels, stacked three feet high. Not one barrel was leaning against the door. Temperatures recorded beneath the blankets ranged from a low of 36 degrees to a high of 42 degrees. Hamm officials say, "This was an excellent test because of the high temperature en route and also because of the length of time the keg temperature was maintained."

● **No refrigerant is used.** In another 2½-day test involving shipment of 360 half-barrels of beer, the lading was covered with four insulating blankets. One thermometer was placed under the blanket at the A end of the car, and a second above the blanket between the A end and the doorway. The car was not blast-chilled and no refrigerant was used. At the time of loading, average outside temperature was 62 degrees. Temperatures en route ranged from the mid 50s to mid-70's.

On arrival, the temperature under the blankets ranged from a low of 35 degrees to a high of 38 degrees. A low of 49 degrees was recorded above the blanket. The distributor reported the car arrived in excellent condition with no shifting of the load.

The car has undergone reefer rating tests at the Budd Co. test laboratories in Philadelphia, Pa. In a two-day test, the average rate of heat transfer was found to be 9,300 Btu per hour per 100 degrees differential in temperature. The loss of 9,300 Btu was for the entire car per hour. North American engineers say this figure is extremely favorable when compared with a 15,000- to 18,000-Btu loss from a conventional refrigerator car insulated with 5 to 6 inches of fiberglass.

● **Assembly line techniques.** The car was assembled on a Whitehead & Kales all-welded underframe having a stationary center sill of two 13-inch, 31.8-pound channels and a sliding sill of two Z-26, 41.2-pound sections. Side sills consist of 8-inch, 18.7-pound channels and 5- by 5- by ⅜-in. angles. The four longitudinal stringers per car are 3-in., 7.5-pound I-beams. There



BUTTONING UP

After panels are positioned, voids between them are filled with foamed-in-place insulation. Here, insulation is being applied at the edges of ceiling panels.

INSULATED UNDERWEAR

Car is equipped with 14 pre-molded urethane foam panels on sides, roof, floor and ends. One of the four side panels is shown going into place at builder's plant.

are four crossbearers and six crossties per car.

Youngstown riveted steel sides, Standard Railway Equipment riveted ends and a diagonal panel riveted roof are used. The side sheets are 0.10-in. copper-bearing steel. There are 24 ¼-in.-plate outside hat-section side posts per car. Door and end sheets are 3/16 inches thick. The car is equipped with Barber S-2-C trucks, 33-in. one-wear wrought steel wheels, 6- by 11 roller bearings standard 24 ⅝-inch draft gear and Keystone 20-inch hydraulic shock control.

The 14 urethane panels per car consist of three ceiling and three floor panels, two end and two door panels and four side panels. Insulation is five inches thick on the sides, ends, door, floor and six inches thick at the roof. The insulation is faced with plywood on one side forming an interior lining of ⅜ inch at the ceiling, ⅝ inch on the sides and doors, and ¾ inch at the ends. Insulation at the floor is sandwiched between two ⅜-in. plywood panels. The 2⅜-in. oak Doweloc flooring is applied through wood stringers in the floor insulation with ¼- by 5-in. double grip screw spikes.

Voids at the junctions of all panels are foamed-in-place after the panels are positioned in the car. Welding studs are applied through the panels which are held in place with polycarbonate fasteners having a flat, countersunk head. When applied, the head is flush with the plywood lining, and the end of the stud is recessed inches below the face of the plywood.

• **Rolling billboards.** The cars are painted with the new blue and white colors and the company crown logo design.

An additional 250 similar cars will be assembled on North American's two production lines after the order of 50 is completed. These cars, with different types of load-restraining devices, will be used for shipping food and industrial products. ■

Dimensions of new Hamm cars

Inside length, ft-in	49- 9
Length over end sills, ft-in	50- 8 1/2
Length over strikers, ft-in	55- 2
Distance between truck centers, ft-in	40- 6
Extreme height, ft-in	15- 0 11/16
Inside height, ft-in	9- 8 5/8
Width over side sills, ft-in	9-11 13/16
Width over side posts, ft-in	10- 3 13/16
Width over roof sheets, ft-in	9- 9 11/16
Width inside, ft-in	9- 0 9/16
Width between side sheets and over side plates, ft-in	9-11 13/16
Capacity, cubic feet	4,374
Lightweight, lb	79,600

WATCHING WASHINGTON WITH WALTER TAFT

TAFT

• **COMPROMISE** for rate deregulation has been devised by Commissioner Laurence K. Walrath of the ICC. He revealed this only recently, although he framed his proposal last year. It was then part of unpublicized undertakings to salvage something of the so-called Harris bill's proposed response to the late President Kennedy's transportation program which has been endorsed by President Johnson.

The Harris bill was sponsored by the chairman of the House Committee on Interstate and Foreign Commerce —Representative Oren Harris (D.-Ark.). While it also had non-controversial provisions, it embodied a watered-down version of the late President's rate-freedom proposal. The bill died in the House Rules Committee. Its principal opponents were water carriers who had much help from others, including grain interests.

IN THE RATE-FREEDOM AREA, the Kennedy Program was also the railroad industry's program. It proposed to end all minimum-rate regulation for the transportation of commodities in bulk and agricultural products.

THE LATE PRESIDENT made this recommendation as an approach to equity under present conditions which include the bulk-commodity and agricultural exemptions. These leave water transportation of commodities in bulk and truck transportation of agricultural products free of all regulation.

THE HARRIS BILL proposed to extend the agricultural exemption to railroads and water carriers, and to narrow the bulk-commodity exemption while leaving it applicable only to water carriers. The proposed narrowing would have made the exemption apply only when but one bulk commodity was being transported in the same vessel or tow. A three-commodity rule now applies.

THE WALRATH COMPROMISE was outlined by the commissioner in an April 1 address at Texas A. & M. University. It is a three-part proposal, first of which would extend a watered-down version of the agricultural exemption to railroads and water carriers. The watering would involve removal of grain from the agricultural-commodity category—except when it was moving from a farm to the first elevator or storage point.

THE COMMISSIONER follows through to suggest exclusion of grain also from the dry bulk-commodity classification. He would leave that exemption, as thus modified, applicable only to water carriers—but he would substitute a one-commodity rule for the three-commodity rule. He would not change present exemptions applicable to water transportation of liquid commodities in bulk.

FREE ENTRY into the business for truckers and water carriers desiring to carry the reregulated grain is the remaining proposal of the Walrath compromise. The commissioner would provide that such carriers would not have to obtain certificates or permits. And their initial tariffs would not be subject to suspension.

THE OUTLOOK for legislation remains uncertain. President Johnson has not yet sent his expected transportation message to Congress. The present Harris bill, H.R.5401, embodies only the non-controversial provisions of its predecessor. And the chairman of the Senate Commerce Committee, Senator Warren G. Magnuson (D.-Wash.) has indicated that he does not expect major transport legislation to be enacted this year.

Retailing: Railroads can learn a lesson

AWR President Roddewig believes public transport can benefit from retail practices.

Are there lessons for the transportation industry—and for government regulators and policy-makers—in the successes enjoyed by such enterprises as retail merchandising? Clair M. Roddewig thinks so—and, he declares, "in point of logic, any breakthrough in the areas of common ownership, coordination and cooperation involving all modes of public transportation would seem most likely to occur along the lines that have been responsible for the spectacular success of retailing, our auto industry and most of the other components of our private-enterprise system."

Roddewig, president of the Association of Western Railways, draws a number of parallels—as well as a few sharp contrasts—between transportation and retailing. His conclusion: "There is a great deal behind the success of the retail segment of the economy that public transportation will have to emulate in order to realize its full potential."

• **Retailing's method:** AWR's president leans heavily on the common-ownership angle. It's significant, he believes, "that the method of organization throughout the top levels of the retail business has been common ownership and that this has been accomplished partly, if not principally, by merger and acquisition—not through coordination or cooperation. Each of these ownerships is an entity in itself. Each goes its own way, carves out its own destiny and its only concern with the others is the wary concern that one tough competitor has for another."

Growth of retailing giants has not been without its problems—but, says Roddewig, "fears that were voiced that gigantic monopolies were in the making have failed to materialize. On the contrary, competition has been intensi-

fied and the public has benefitted."

• **Now for the problems:** Application of retailing experiences to transportation, however, poses its own peculiar set of difficulties. Given the vast array of transport services available, what do you do to develop department-store transportation? Is cooperation a practical possibility, as a substitute for common ownership? Roddewig doubts that it is, though he doesn't rule it out as a possibility. Among the complexities he cites:

—The almost limitless scope of cooperative arrangements covering through services, joint rates, divisions, "if we have to anticipate the participation of everybody in the business of public transportation. The advantages of staying out of a cooperative arrangement of this magnitude might be more attractive than getting into it."

—Obstacles posed by the "subsidies, regulatory freedoms and other unfair advantages that are presently enjoyed by some forms of transportation to the competitive disadvantage of others, particularly railroads. Without a leveling off of these inequalities in public policies, railroads may be expected to be reluctant to enter into cooperative arrangements that would add to the competitive advantages already enjoyed by rivals."

—The problem of whether shippers and the public generally "would get much benefit in the way of better service at lower costs from a huge cooperative complex in which the participants would continue to be competitors with each other."

• **A path to be made.** The prerequisite for progress, AWR's president emphasizes, is the clearing of a path "through the regulatory jungle that all but buries public transportation. This—we may just as well anticipate—will be a gigantic task.

"We must break down the governmental barriers that today effectually prevent the integration of the various modes of public transportation. It also will be necessary for government to restore to all segments of public transportation adequate and uniform freedom to compete, to grow, to expand, to diversify, to adjust quickly to changing conditions, to consummate mergers without prolonged delays and similarly to progress common ownership, coordination and cooperation. . . ."

Roddewig's comments came in a discussion of the three c's—common ownership, coordination and cooperation—at a transportation conference at Texas A&M University. ■

RPI names a new president

LENNARTSON

The Railway Progress Institute last week announced the election of Nils A. Lennartson as president of the organization.

Lennartson, who has been serving in the federal government as deputy assistant Secretary of Defense (Public Affairs), succeeds Holcombe Parkes. Parkes retired April 1 after having held the post of RPI president since 1955.

The election of Lennartson was announced by A. H. Smith, chairman of the RPI and president of the Kerite Co., following a meeting of the executive committee in Chicago. Lennartson will assume his new duties in mid-April.

The new 49-year-old spokesman for the nation's railway equipment and supply industry has held various government public affairs positions over the last 16 years. For the past four years he has been with the Defense Department.

He entered government service in 1948 as special assistant to the Secretary of the Air Force, and served in that capacity from 1948 to 1952. For that duty he received the Air Force's Exceptional Civilian Service Award.

From 1952 to 1953 he was Director of Information for the Department of Commerce. From 1953 to 1961 he was Assistant to the Secretary of the Treasury with responsibility for public affairs and Congressional relations. In 1961, Treasury Secretary Robert B. Anderson awarded him the Treasury's "Certicate for Exceptional Service."

Secretary of Defense Robert S. McNamara in 1961 appointed Lennartson a deputy assistant secretary (public affairs) in that department, his most recent assignment. Last year, the Department of Defense nominated him for a Rockefeller Public Service Award for his work.

Before entering public service, Lennartson was a reporter with the Gannett newspapers in Maine. He also was active in industrial public relations work, and once was associated with the Maine Central. He is a graduate of Bates College, Lewiston, Me., and was a captain in the Air Transport Command in World War II. ■

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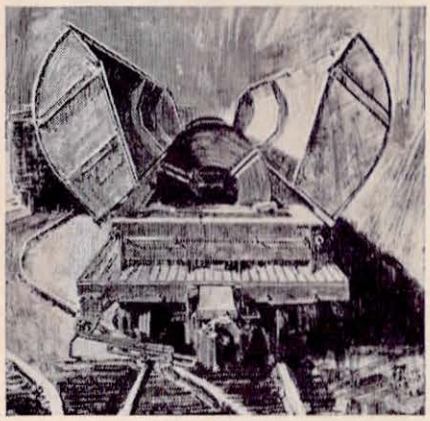

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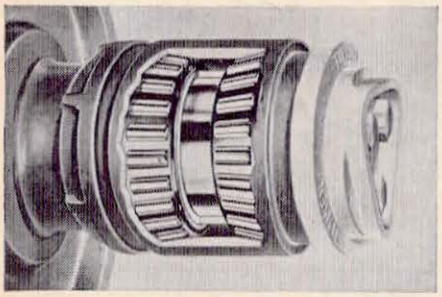

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DIVERSIFICATION SUCCEEDS—I note that the Southern Pacific in 1964 earned net income before federal income taxes of $19.4 million on its non-railroad operations, and more than half of this net came from its pipelines—which had net before taxes of $11.3 million from gross revenues of about $21 million. If there is a transportation enterprise anywhere with a more favorable profit ratio than SP pipelines, where could it be?

Meantime, SP's trucking operations (also profitable, but not as spectacularly so as the pipelines) had gross revenue of almost $78 million last year—which was 57% as much as the carrier revenue of Consolidated Freightways, the country's largest trucker. And Consolidated operates nationwide, while SP trucks are confined to the railroad's own territory. Let's not overlook, either, the severe regulatory restrictions that limit truck operations by a railroad.

All in all, it seems to me that SP has conclusively shown that railroad people have the ability to operate other forms of transportation with great success. And it will be recalled that SP (along with IC) tried to get into the barge business, but was denied authorization by the ICC. The bargers strenuously opposed expansion by SP-IC into their business.

Could it be that they, and the regulators, were fearful lest railroaders were fixing to demonstrate an embarrassingly superior skill in that branch of transportation too?

FIXED PLANT—RAILROADS' AND OTHER MODES'—The central fact, and a sad one, about the railroad business continues to be its lack of adequate capital (that is, in comparison to rival modes of transportation). Suppose railroad capital expenditures, this year, reach a heartening record total of $1.6 billion—still only about 20% of railroad capital expenditures are going into fixed plant, the balance being for equipment. That would mean that railroads are spending $320 million on fixed plant improvements.

But look what state and local governments are spending on fixed plant for the use of rival modes of transportation—$16.2 billion, which is 50 times as much as the railroads are spending to improve their fixed plant (as was reported in Walter Taft's column, RA, April 5, p. 12). Granted that governmental expenditures include maintenance as well as capital improvements—suppose only half the governmental outlays are for capital purposes, that would still leave plant improvement expenditures for the railroads' rivals at 25 times similar outlays by the railroads.

How can the railroads keep comparatively up-to-date (alongside their competitors) with such a heavy imbalance in their rate of capital spending on fixed property?

This uneconomic imbalance, is, of course, just as harmful to the users of transportation service, as it is to the railroads. The sound means to correct it would be to increase "user charges" and reduce governments' expenditures in promoting other modes.

If that route is politically impracticable, then what expedients are there toward the same end? Could there possibly be a more urgently important policy question confronting the railroads than this?

A 3-RAILROAD TOWN—Down in Dothan, Ala., they are proud of the fact that—in a town of 31,400—they have, nevertheless, the headquarters offices of three railroad presidents. The railroads are the Atlanta & St. Andrews Bay (81 mi.), the Hartford & Slocomb (22 mi.), and the Chattahoochee Industrial (15 mi.). An unidentified friend at Dothan sent me a clipping from the local paper, boasting of the town's importance as a railroad center, and (to me) such local recognition of the railroads' importance to the community is gratifying.

What with mergers and abandonments, it is rather hard to keep up with what towns have how many railroads. For instance, what city in the country is served by the most railroads? What is the biggest city with only one railroad serving it? What is the biggest town with no railroad service, (a) for passengers or (b) for both passengers and freight? Is there anybody keeping tabs on such interesting (but not necessarily profitable) information?

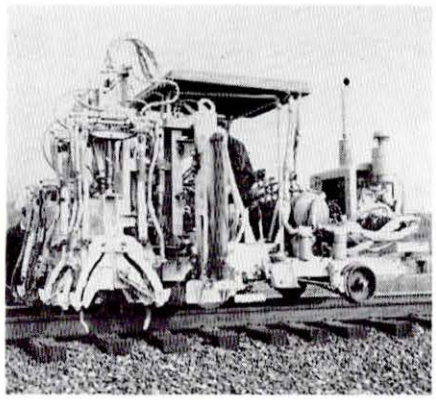
NEW PRODUCTS REPORT

Station Wagon (RA-1)

Track inspection, patrol and maintenance can be facilitated through the use of a Checker Marathon station wagon equipped with Hy-Rail flanged-wheel attachment. The station wagon is said to seat six passengers comfortably and provides a cargo space of more than 93 cu ft. Door openings have been made wider and higher for ease of entry and exit and loading and unloading. Flat wide floors without humps or wheel wells are said to permit fast and easy loading through extra-wide lower tail-gate openings.

The Hy-Rail equipment uses load-bearing rubber-tread guide wheels, acting independently and turning on tapered roller bearings. Loads on guide wheels are applied through a rubber cushion torque that is easily adjusted. Guide wheels are raised and lowered manually and are held in position by a husky mechanical lock. A hand-operated steering-wheel lock is mounted on the steering column.

Special splash plates are installed between the bumpers and the body. *Checker Motors Corp.*



Hydraulic Tamper (RA-2)

A new tamper, designated the McWilliams Hydraulic "8" Tamper, is equipped with eight heavy-duty hydraulic tamping guns, such as are used on the McWilliams Hydramatic "16" Automatic Tamper.

It is claimed that the efficiency of the hydraulic tamping system is 15% greater than with air units and that the tamping guns operate at a frequency of over 1,900 blows per minute. As a result of the hydraulic application to the McWilliams 8-Tool Tamper, the manufacturer states that a more economical operation with higher speed has been achieved.

The McWilliams Hydraulic "8" Tampers may be equipped with two four-tool heads with guns operated by spring-loaded connecting rods which provide accelerated operation. The tamper is also available equipped with four double-tool heads so that the two guns inboard or outboard of the rail may be operated independently. In addition, the option to control the guns individually is also available. *Railway Maintenance Corp.*

Weed Killer (RA-3)

Tordon 22K is said to be a highly active systemic type of weed killer that is exceptionally effective in very low concentrations on perennial weeds, such as field bindweed, Canada thistle and Russian knapweed. The formulator states that, even with low dosages ranging from one to 1½ gallons per acre, this herbicide achieves control approaching 100% of many tenacious broad-leaved weeds. In addition, it is pointed out, grass growth is not eliminated and the material is believed to be the safest herbicide yet developed, so far as wild-life is concerned.

Tordon 22K dissolves readily in water, and, can be sprayed with conventional ground-spray equipment, it is said, without the need for unusual safety precautions. Likeliest application periods are said to be in the spring, summer and fall, when adequate moisture is available to stimulate growth.

The formulator reports that evaluations of Tordon applications have been completed in hundreds of locations over a period of years by agricultural experiment stations. *Dow Chemical Co.*

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NEW PRODUCTS REPORT

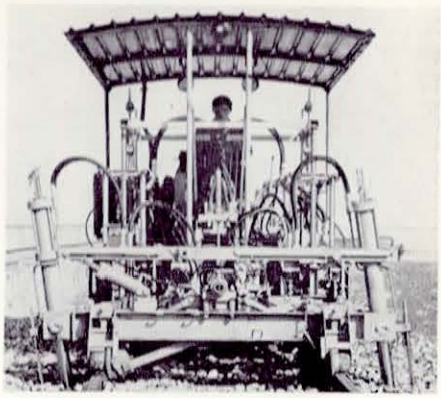
Truck Crane (RA-4)

Designed for truck-crane application, a new full-revolving hydraulic crane has a capacity of 25,000 lb at 10-feet radius. Designated Model 25-T Multikrane, this unit includes a three-part telescopic boom with a working radius of from 10 to 60 feet and an elevation ranging from horizontal, when the carrier's outriggers are set, to 75 deg vertical. In horizontal position, boom has a reach of 24 to 60 feet. Its swing mechanism is hydraulic, working through a ring gear and pinion.

The boom has a topping speed of 23 sec, a swing speed of up to 3.5 rpm and a crowd speed of 45 sec while extending and 30 sec while retracting. Its crowd force is said to be 21,990 lb while extending and 9,625 lb while retracting.

Powered by a Hercules G-3400 engine, Model 25-T has four hydraulic circuit systems and several hydraulic pumps having an aggregate capacity of 175 gpm at a governed engine speed of 2400 rpm.

The Multikrane Carrier is optional but the Multikrane can be furnished for mounting on a suitable carrier of the customer. *Pettibone Mulliken Corp.*



Medium Tamper (RA-5)

A tamper of medium power has been made available for raising, tamping and lining. Designated Model LCR-03, this machine is hydraulically operated and is powered by a 36-hp diesel engine.

It is comprised of a welded-steel chassis mounted on four large-diameter wheels with lifting jacks and rail clamps positioned at the front and the tamping units between the axles. The engine and operating control position are placed in the rear.

Leveling and lining are controlled by a target, fitted with a means of illumination, placed in front of the machine, and a precision telescope from which the indications are transmitted to the machine. For cross level, the unit is equipped either with a mechanical pendulum indicating the cant or with an electronic control lever with which the required cant is obtained automatically. The lifting jacks are pivoted to the frame and can be moved from vertical to effect the track throw to the right or left.

The machine will lift as high as 10 inches and will throw track as much as 4 inches. *Matisa Equipment Corp.*

Weed Killers (RA-6)

Two new herbicides for the residual control of weeds and grasses have been developed for railroad use. They are designated Kleer-Trax TM and Kleer-Trax FTM.

The formulator recommends Kleer-Trax for application where annual and perennial weeds and grasses are the main problem and residual control is desired. Where vines and other problem weeds and grasses are present, Kleer-Trax F is said to give season-long control.

Both materials are dry (wettable) powder formulations and are recommended for use in conjunction with other herbicides, such as Amizol for control of weeds and grasses; Amitrol-T for positive control of hard-to-kill weeds, such as milkweed, horsetail, honeysuckle and poison ivy; and Fenac for the control of problem weeds like kochia, Russian thistle, puncture vine, bindweed and others. Certain of these herbicides are recommended in each of the three distinct geographical areas for use either alone or in combination. *Amchem Products.*

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PEOPLE

BALTIMORE & OHIO.—Harold L. Beattie, mine rating engineer, Clarksburg, W. Va., appointed assistant to vice president—coal traffic and development, Fairmont, W. Va. **Robert B. Grayson,** manager of industrial accounts, coal traffic and development department, promoted to assistant director of sales—system. **Thomas S. Turnbull,** manager—lake coal traffic, appointed regional sales manager—coal traffic and development, headquarters as before, Cleveland. **A. Rex Jones,** assistant district manager, Fairmont, appointed district manager—coal traffic and development there. **Conwell R. Taylor,** sales representative—coal traffic and development, appointed district sales manager—coal traffic and development, Detroit, succeeding **Richard A. Lozier,** who replaces Mr. Turnbull. **John R. Mohr** named sales representative, Detroit.

BESSEMER & LAKE ERIE.—Thomas W. Corbett appointed coal sales representative, Pittsburgh, Pa., Mr. Corbett was formerly associated with the **Pittsburg & Shawmut** at Kittanning, Pa.

Alan L. Stevenson, acting supervisor signals and communications, Greenville, Pa., since February 1963, appointed supervisor signals and communications.

CANADIAN NATIONAL.—J. L. Charles, consulting engineer, Winnipeg, Man., retired April 1. For the past 54 years Mr. Charles has been associated with the building of railway lines in Canada.

CANADIAN PACIFIC.—P. E. Carrière, assistant superintendent, Laurentian division, Trois Rivieres, Que., appointed assistant to chairman and president, Montreal, succeeding **E. P. Jolicoeur,** transferred. **J. R. Fortier** succeeds Mr. Carrière.

CHESAPEAKE & OHIO.—Clarence R. Bland, assistant superintendent motive power—electrical, named assistant superintendent motive power.

H. M. Crenshaw appointed superintendent costs—Central Region. **R. J. McGee** named superintendent costs—transportation, both at Huntington, W. Va.

CHESAPEAKE & OHIO—BALTIMORE & OHIO—John L. Rogers, Jr., executive representative and general attorney, B&O, Chicago, and vice president, **B&O Chicago Terminal,** appointed general manager—Chicago Terminals, B&O-C&O. Mr. Rogers will be responsible for operations of the C&O-B&O and the subsidiary B&O Chicago Terminal in the Chicago area. He will also assist in coordinating facilities and operations for the three properties in that area.

CHICAGO & NORTH WESTERN.—Iver S. Olsen, freight traffic manager, Chicago, appointed assistant vice president-traffic there.

John M. Peters, traffic manager, Omaha, retired March 31 after more than 46 years of service.

KANSAS CITY SOUTHERN.—J. E. Fitzmorris, Jr. appointed assistant to president, New Orleans.

Robert R. Estes, general agent, Little Rock, Ark., transferred to Joplin, Mo., to succeed **John S. Hunsaker,** who retired Mar. 31 after more than 48 years' service. **Leo J. Tamisiea,** traveling freight agent, Kansas City, Mo., succeeds Mr. Estes. **Kenneth D. Clark,** general agent, Fort Worth, Tex., transferred to Fort Smith, Ark., to replace **L. E. Futrell,** named assistant to general agent, Kansas

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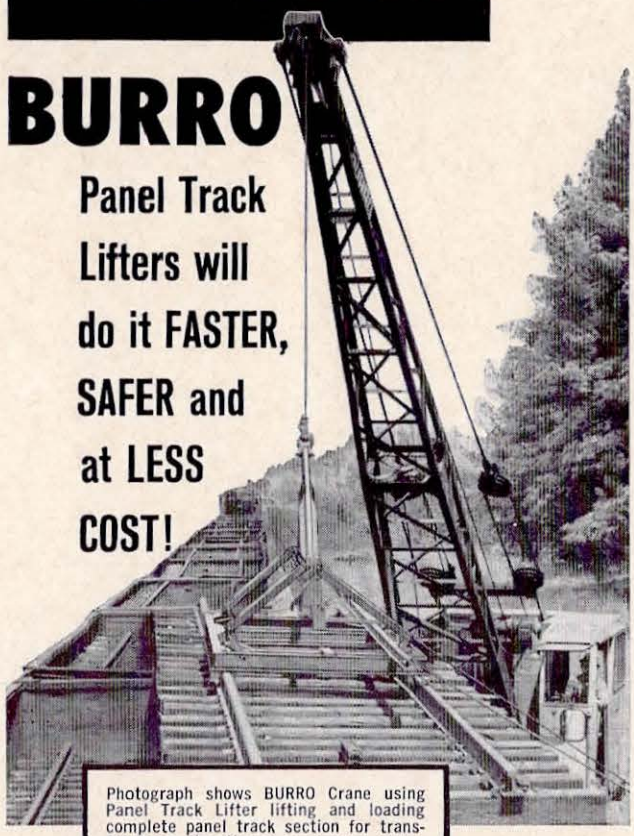
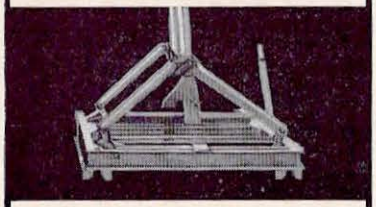


Photograph shows BURRO Crane using Panel Track Lifter lifting and loading complete panel track section for transfer to new location.



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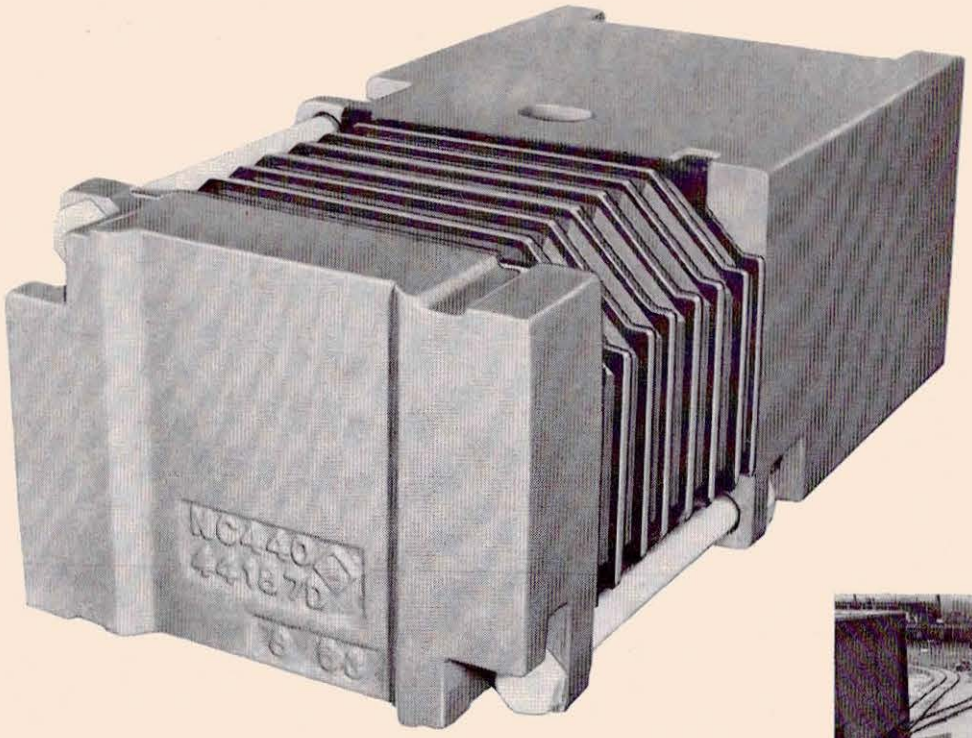

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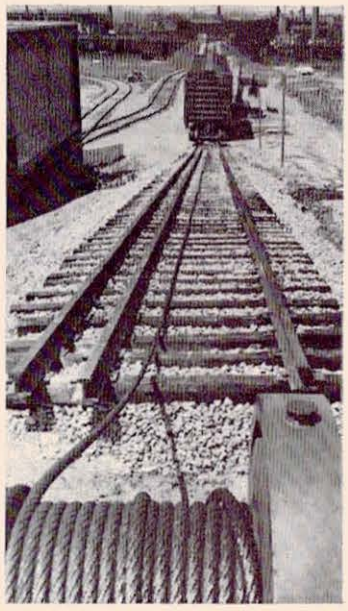

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George A. Tedesco
P-S

City. Mr. Clark's successor is **Henry P. Brannan, Jr.**, general agent, Beaumont, Tex., who in turn is succeeded by **Waymin R. McMillon.**

MISSOURI PACIFIC-TEXAS & PACIFIC.—B. F. Wilkins, named assistant manager of stores, St. Louis, replacing the late **G. J. Torma.**

NEW YORK CENTRAL.—Bernard P. O'Connor appointed director of foreign freight sales for the system. Mr. O'Connor has been freight sales manager at Chicago for two NYC subsidiaries, the **Indiana Harbor Belt** and the **Chicago River & Indiana.**

W. E. Elliott promoted to district claim agent, Buffalo, N.Y., succeeding **W. G. Broadbent,** retired.

READING.—Clinton C. Funk, Jr., general manager, **Reading Transportation Co.,** wholly-owned trucking subsidiary of the railroad, named general manager, T.O.F.C. Service, Reading. In his new post, Mr. Funk will have over-all responsibility for all phases of the road's piggyback operation, including supervision of RTC, T.O.F.C. sales and rates, all ramping operations and operation of the trailer control center. **William C. Noble,** manager, sales development, RTC, appointed manager, succeeding Mr. Funk.

REA EXPRESS.—Martin Whitten appointed assistant vice president—sales, New York. He was formerly vice president, Republic Carloading & Distributing Co.

Richard T. Kent appointed assistant treasurer, Finance Department. **William B. Foote** named director, Prevention and Security division, Operations Department. **Harvey Golub** appointed assistant director, Systems & Procedures Division, Controller's department. Mr. Kent was formerly assistant treasurer, McKesson & Robbins; Mr. Foote was assistant vice president and account executive, Allied Maintenance Corp. and Mr. Golub was on the engineering staff of International Business Machines Corp.

SEABOARD.—Thomas B. Cash, assistant general freight agent, Columbia, S.C., promoted to manager TOFC traffic, Richmond, Va., succeeding **Robert L. Mott,** named general manager freight sales (RA, March 22, p. 60). **Jesse C. Parrish,** assistant to manager TOFC traffic, appointed assistant manager TOFC traffic.

SOUTHERN PACIFIC PIPE LINES, INC.—Byron K. Smith, vice president and general manager, named president and general manager, Los Angeles.

Supply Trade

George A. Tedesco, assistant to the director of public relations, **Pullman-Standard** division of **Pullman Inc.,** has been appointed assistant vice president, public relations.

Gilbert Engholm has been named group leader of environmental research of **General American Transportation Corp.'s MRD Division.** He was formerly supervisor of the MRD thermodynamics research section.

William M. Pelino, chief technical advisor, **Servo Corp. of America,** has resigned to become president of **Railtron Corp.,** a newly formed organization to engage in applications engineering of electronic systems to railroad operations.

Robert M. Dwyer, formerly a sales representative in Chicago for **Shippers' Car Line** division of **ACF Industries,** has been appointed central district sales manager, to head the recently established office in St. Louis, Mo.

Harvey R. Lambert has been appointed representative, **Ellcon-National,** New York. Mr. Lambert was formerly with Shipper's Car Line.

Richard M. Hill, vice president and director of **Cheston Co.,** has been named vice president of the firm's parent company, **Lovell-Dressel Co.,** Kearny, N.J.

OBITUARY

C. William Cornell, 76, an attorney at Los Angeles for the **Southern Pacific Co.,** and its subsidiary **Pacific Electric** for 40 years until his retirement in December 1954, died March 30 at Good Samaritan Hospital.

Norman F. Cowie, 57, general traffic manager, **Canadian Pacific,** Montreal, died in Queen Elizabeth Hospital there on March 30, after a short illness.

Emory S. Moore, 56, deputy director of passenger traffic, **Military Traffic Management & Terminal Service,** died of a heart attack at his home in Warrenton, Va., on March 27.

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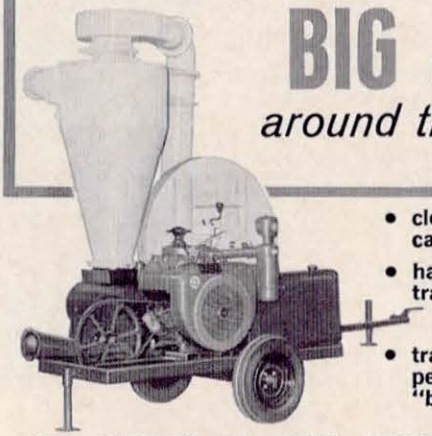

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MARKET OUTLOOK

Carloadings

Loadings of revenue freight in the week ended April 3 totaled 548,714 cars, the Association of American Railroads announced on April 8. This was an increase of 7,315 cars, or 1.4% compared with the previous week; an increase of 34,892 cars, or 6.8% compared with the corresponding week last year; and an increase of 2,693 cars, or 0.5% compared with the equivalent 1963 week. Ton-miles generated by carloadings in the week ended April 3 are estimated at 12.8 billion, an increase of 12.1% over the corresponding week of 1964, and 10.6% over the 1963 week.

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, April 3

District	1965	1964	1963
Eastern, including Allegheny and Pocahontas ..	230,333	201,927	220,923
Southern	113,437	110,671	117,432
Total Eastern and Southern Districts	343,770	312,598	338,355
Northwestern .	60,909	56,881	56,825
Central Western	107,150	107,626	112,019
Southwestern .	36,885	36,717	38,822
Total Western Districts	204,944	201,224	207,666
Total All Roads	548,714	513,822	546,021
Commodities:			
Grain and Grain products	49,129	43,470	52,485
Livestock	1,963	2,143	3,317
Coal	96,018	87,845	94,027
Coke	9,047	7,413	8,115
Forest Products	37,547	38,831	36,453
Ore	22,969	20,508	15,933
Merchandise l.c.l.	10,175	13,688	18,664
Miscellaneous .	321,866	299,924	317,027
Apr. 3	548,714	513,822	546,021
Mar. 27	541,399	520,527	558,613
Mar. 20	550,940	530,178	534,998
Mar. 13	555,740	515,267	517,209
Mar. 6	537,356	511,672	517,757
Cumulative total, 14 weeks ...	7,379,433	7,228,368	7,145,133
Estimated revenue ton-miles (billions) 14 weeks ...	180.2	170.0	156.3

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended Mar. 27 totaled 19,997 cars, compared with 16,512 for the corresponding 1964 week. Loadings for 1965 up to Mar. 27 totaled 238,434 cars, compared with 205,927 for the corresponding period of 1964.

IN CANADA.—Carloadings for the seven-day period ended March 21 totaled 71,944 cars, compared with 70,672 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
March 21, 1965	71,944	25,581
March 21, 1964	70,672	26,009
Cumulative Totals		
March 21, 1965	768,291	271,675
March 21, 1964	789,790	293,931

FREIGHT-TRAIN CARS

► *Bad Order Ratio 0.3% Lower Than Last Year.*—Class I roads on March 1 owned 1,496,094 freight cars, 10,655 less than on March 1, 1964, according to AAR report summarized below. Bad Order Ratio was 0.3% lower than on March 1, 1964.

	March 1, 1965	March 1, 1964	Change
Car ownership	1,496,094	1,506,749	—10,655
Waiting repairs	89,382	95,323	— 5,941
Repair ratio	6.0%	6.3%	— 0.3%

NEW FACILITIES

► *Canadian National.*—Major 1965 projects in western territory include conversion of a 1,200-ft mainline bridge near Entwistle, Alta., from a wood to a steel structure. The bridge, longest timber structure remaining on CN's Mountain Region mainline, was partially converted in 1963 as an aid to a highways project. Steel supports are now being moved in, and the full conversion is scheduled for completion in July. CN will also purchase in '65 960,000 tons of crushed rock, for use in a three-year upgrading project involving line between Winnipeg, Man., and Port Arthur, Ont., (Prairie Region).

► *Clinchfield.*—Purchased two hotbox detectors from Servo Corp.

► *Louisville & Nashville.*—Authorized track construction along a 178-mile segment of main line between Montgomery and Mobile, Ala. Work will include changes in passing tracks, rearrangement of signals, and other work needed for improved traffic flow of heavier tonnage trains in that area. The program is part of a $5.6 million track construction and freight car rebuilding program authorized by L&N directors March 18.

► *Norfolk & Western.*—Purchased two hotbox detectors from Servo Corp.

► *Pennsylvania.*—Will lengthen lead tracks at the west end of Conway Yard, west of Pittsburgh, to eliminate conflicts between road and yard movements, reduce delays and cut terminal costs. PRR also plans to fireproof the Conway enginehouse. Total cost of the two projects will be about $875,000.

► *Soo Line.*—Will spend $482,000 for new roadway maintenance machines and tools; $425,000 to extend CTC between Fond du Lac and Stevens Point, Wis.; $346,000 modernizing and replacing bridges; $115,000 to expand the road's network of wayside radio stations from Minneapolis to Noyes, Minn., for radio equipment in switchers and in yard offices and for yard crews. Soo's 1965 program also calls for $2.9 million to be spent upgrading track with installation of 24 miles of heavier rail, 252,000 crossties and 71 miles of ballast.

► *Toronto, Hamilton & Buffalo.*—Ordered four GCP units from Marquardt Corp., to be installed at a highway grade crossing in Hamilton, Ont.

► *U.S. Army Corps of Engineers.*—Ordered 15,780 tons of 115-lb rail for $2.2 million from Colorado Fuel and Iron Corp. The rail will be used in relocation of tracks of the Spokane, Portland and Seattle in connection with the John Day Lock and Dam Project in Washington State.

YOU OUGHT TO KNOW

Hutchinson succeeds Hill at NAMBO: Everett Hutchinson, who resigned from the ICC to head the National Association of Motor Bus Owners (RA, April 5, p. 7), succeeds Arthur M. Hill in that association's presidency. Hill was one of NAMBO's founders in 1926, and headed it from the beginning. He has also headed Atlantic Greyhound Corp., and served as a director and chairman of the executive committee of the Greyhound Corp. He will retire from the latter position May 1.

What's the schedule? Soo Line, the Post Office Department and the Minnesota Railroad and Warehouse Commission are having timetable problems. Soo wants to discontinue its part of the operation of the "Winnipeger," a joint Soo-Canadian Pacific train between the Twin Cities and Winnipeg. But the Minnesota commission hasn't yet ruled on the application. And, in the meantime, the P.O. Department is planning to take the mail off the trains May 1. Soo first asked the Postmaster General to delay the mail-off move—and got turned down. Now the road has petitioned the state commission for a new hearing on the train-off petition.

ACF expanding plant: American Car & Foundry is adding a new building to its Milton, Pa., plant to provide space for additional railroad freight and tank car fabrication facilities. The 30 x 225-foot structure will contain 6,750 square feet of floor space. "The increasing size and complexity of new railroad rolling stock today, and recently added capabilities for manufacturing new types of cars at Milton have made the projected addition necessary," said Carol A. Mundt, ACF vice president and division general manager.

First new cars on PATH: The governors of New York and New Jersey and other public officials got their first ride on the Port of New York Authority's new air-conditioned rapid transit cars last week. The special ride and ceremonies marked the inauguration of service for the first six of 162 new cars being built for PATH by St. Louis Car.

Safety report: No passenger fatalities were reported in train and train-service accidents in January —but there were 75 passenger injuries, according to the ICC. This compared with one fatality and 120 injuries in January 1964. Twenty employees-on-duty were killed in January 1965 and 1,527 injured, compared with 16 killed and 1,683 injured in January 1964.

Promoting international cooperation: REA President William B. Johnson has been made a member of the National Citizens' Commission on International Cooperation, according to an announcement by Robert S. Benjamin, chairman of the United Nations Association of the USA. The Commission will work in collaboration with Cabinet Committees in 28 subject areas ranging from education to urban development, from international law to the conservation of resources, in preparation for a White House Conference on Internation Cooperation in November.

World's Fair trains readied: Looking forward to heavy rail travel to the New York World's Fair this year, the Pennsylvania is scheduling 112 special trains to carry the crowds. PRR's John B. Dorrance, Jr., general manager of passenger sales, expects the road to carry more than the half million Fair passengers who rode the trains last year. The first three Fair trains will operate from Philadelphia and Washington during the April 24th Fair opening weekend.

General American's new signature: The letters "GATX," combined with a line above a circle, make up the new corporate trademark for General American. The symbol replaces the triangle which has been used to identify the corporation since 1902. "Selecting a representative symbol for General American could not be a simple task," said company president Spencer D. Moseley, "but our customers, employees and most of the public have come to know us as 'GATX'."

Truck tonnage: Intercity truck tonnage in the week ended March 27 was 0.8% above the volume for the previous week, and 13.2% ahead of the volume of the corresponding week of 1964, according to American Trucking Associations.

Current statistics

Net income	
12 mos., 1964	$699,000,000
12 mos., 1963	651,000,000
Carloadings, revenue freight	
14 wks., 1965	7,379,433
14 wks., 1964	7,228,368
Freight cars on order	
March 1, 1965	34,909
March 1, 1964	35,760
Freight cars delivered	
2 mos., 1965	12,721
2 mos., 1964	10,720
Serviceable cars	
March 1, 1965	1,406,712
March 1, 1964	1,411,426

LETTERS FROM READERS

Are railroads 'military'?

New York, N.Y.

To the Editor:

I thought the interview with Dr. R. N. McMurry in your March 1 issue was an excellent piece of work. I am disturbed, however, by the exception taken, in an editorial note which precedes the interview, to a couple of Dr. McMurry's views.

Most particularly, it surprises me that journalists so long associated with the railway industry should have failed to perceive, as Dr. McMurry has, that the prevailing organizational philosophy of the railroad industry is "military." I have always assumed that *everyone* was aware of this aspect of the industry's character.

I judge that your having taken exception to this suggestion by Dr. McMurry is by way of defending the industry from an implied criticism. To me this seems a disservice to the industry on at least two counts.

First, there is nothing necessarily wrong about the organizational philosophy of the military, assuming that one carries it out logically. Unfortunately, in the railroad industry we are saddled with some of the less attractive aspects of this philosophy, without an adequate understanding of the context in which they become appropriate. We also have failed to develop the sophistication in line-staff relationships that the military has developed and so do not benefit from some of the better parts of this over-all philosophy.

Second, if a military philosophy is generally inappropriate in an industrial situation, it does no good for you to deny its undeniable existence in the railroad industry. It seems to me that you would do a greater service by admitting its existence, determining the reasons therefor, and exploring some of the ways in which it can be eliminated or, at the least, turned to better account.

A. Scheffer Lang

[We passed no value judgment on the merits or demerits of "military" organization. It just does not seem to us that an organization follows closely a military pattern when it is as subject to restrictions by unions and the regulators, as the railroads are.—Editor]

Disagrees with Dr. McMurry

Bluefield, W. Va.

To the Editor:

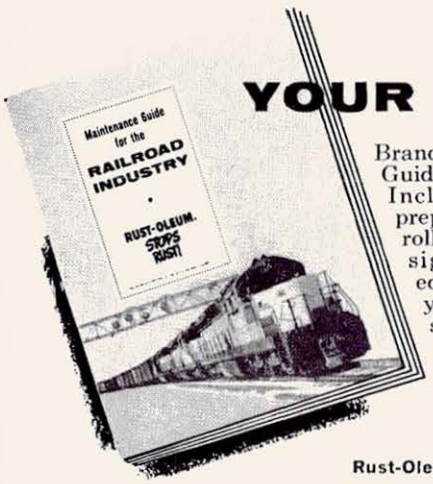
As an avid reader of Railway Age, I am impelled to comment upon your March 1 article, entitled "A Psychologist Analyzes Employee Management Relationships," expressing the views of Dr. Robert N. McMurry. Several of his conclusions would appear to be based on other than solid ground.

The railroads have been working hard to gain increased volume of business by improvement of rolling stock, betterment of communications, improved motive power, more attractive rates to shippers, and faster, more efficient service. . . It appears to be more and more the trend that everyone from the track laborer upward feels that he could run the railroad far better than the present management. I am interested in the comment "the union—in the worker's view—is the only bulwark he has against exploitation by management and mistreatment by his immediate supervisor." From personal observation, the "mistreatment by his immediate supervisor" is little in evidence. . . .

Dr. McMurry says: "it follows then that, if the employees lack confidence in management's basic integrity, the unions have a clear field to keep old attitudes alive." It would appear that the succesful operation of the railroad calls for the "basic integrity" of the employee as well as the "basic integrity" of management. The desire of the worker should be to put forth extra effort to see that his company grows and not to do the least possible amount of work to get by without being reprimanded. Can one, for example, call one hundred miles a day an honest day's work? Can one call the sixteen-hour law, as it actually operates, employee integrity? Can one honestly claim that to dismiss a fireman who has no firing to do, is lack of integrity on the part of management?

Dr. McMurry's comments on the colorful nature of union publications is interesting and true. They are colorful and easy to read but so are the tabloids and about as accurate. The author seems to object to "lawyers, accountants, financial men" being railroad presidents, but many more of them have come up the ladder from operational posts. Further, on those railroads where the president is a financial man, etc., their senior vice presidents are usually excellent operational men. To ask the railroad president to be a specialist in such complex fields as finance, mergers, law, taxes, etc., is to ask the impossible. To ask the railroad president to visit each roundhouse, service building, warehouse, and track gang, would impose a task physically impossible for any one man.

To draw an analogy with medicine, the day of the general practitioner in medicine was perhaps a finer, closer, warmer method of practicing medicine . . . but today, with complicated heart surgery, brain surgery, artificial kidneys, grafting of major organs, and so forth, it is manifestly impossible for the general practitioner to be sufficiently con-



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versant with all these subjects to perform this work alone. Therefore, we have a highly specialized type of medicine which permits people to live longer and to remain healthier than was true fifty years ago. So, with the railroad industry, there are those whose forte is finance, those who excel in operation, those whose skills are in the motive power department, communications field, traffic, etc. Such specialization makes for a better, more efficient and progressive railroad industry.

I cannot agree that "the first thing railroads have got to do, then, is find out what are the beliefs, problems, the emotional needs of the employees." From close observation, I doubt that railroad management has much to do with (nor needs to have) much to do with the emotional needs of employees. Honest, fair, and appreciative treatment of employees is certainly indicated; for good work, a tangible reward is to be desired. However, an honest day's work for an honest day's pay; pride in the work which one does; pride in railroading and pride in the individual railroad for which the person works; these are, in my opinion the employees' obligation. The employee who has such an attitude towards his work should, with the satisfactory financial rewards which he now obtains, have little need for management's concern "with soothing his emotional needs."

I have spent much time over several years thinking about the problems discussed in this fascinating article. Though closer personal contact between top management and employee would certainly be ideal, the only possible General Practitioner of railroading, would have to be a Vice President in Charge of Being Nice to the Employees. In this day and age of specialization, this post would be hard to fill.

William F. Hillier, Jr., MD

[Dr. Hillier, a neurosurgeon, speaks with the authority of his professional experience, and his residence in an important railroad community, in this rejoinder to Dr. McMurry's opinions. As we understand it, Dr. McMurry was not so much defending employee attitudes, as urging that management know what these attitudes are, however erroneous; and seek more effective means of correcting them, where they are unrealistic.—Editor]

A passenger's view

Flushing, N.Y.

To the Editor:

Just to keep the record accurate: your statement that New York City's Independent Line cars all date back to 1932 [RA, March 8, p. 31] is inaccurate. The first ones were built in 1932. But some date as recent as 1940. . . . Some BMT [Brooklyn-Manhattan Transit] lines partially serve in IND territory with cars as recent as 1963.

The thing that does upset me is that the new subway cars as being built offer no improvements in speed, ventilation, or comfort over those built in 1932. Maybe a car in local service that stops every five blocks would have no use for more than 45 mph top speed. But certainly express trains with stops three mile apart could use 70 mph speeds to great advantage. I for one who spend 1½ hours a day, six days a week, commuting inside New York's city limits would like to look forward to something better than the 18 mph average I get going to and from work. Just five minutes improvement each way would be appreciated. Sure, speed costs money—better track, better maintenance, and more power used. But it also would require use of fewer cars to do the same job (and less operating personnel).

It seems that railroads in general want to keep their service in the dark ages. I remember as a kid, when we were riding along the highway, a passenger train would pass you like you were parked. Later, some trains you passed, some passed you. By the 1950's I could drive (on a standard two-lane road) faster over a 300-400 mile distance than most passenger trains. Coming back from vacation last summer, I drove across the state of Ohio (on the turnpike) in three hours. People were passing me quite often, too—I wasn't setting any records. Can you ride a train across Ohio in three hours? No, not even in four hours. In fact, trains take as long now as they did 20 or even 30 years ago. Clearly, the railroads have not kept up. There is no reason why trains should not have the same advantage over other surface transportation that they had 50 years ago. Fifty years ago it was proposed to build a railroad that would have express trains taking 10 hours from New York to Chicago; and there is no reason today, with present knowhow, that trains and track capable of this schedule could not be built. . . . I like trains and I like railroads. But like so many, I'm forced to use other means of travel, because of lack of time, money, service, convenience, and even pleasure.

Elliott Kahn

Current Publications

A HISTORY OF RUSSIAN RAILWAYS, by J. N. Westwood. 326 pages, illustrations, maps. George Allen & Unwin, Ruskin House, 40 Museum St., London, W.C.1, England. 45 shillings.

MARKETING URBAN MASS TRANSIT; A Comparative Study of Management Strategies, by Lewis M. Schneider. 217 pages, tables, charts. Division of Research, Graduate School of Business Administration, Harvard University, Boston 63. $5.

BASIC CONCEPTS IN SIGNAL ENGINEERING, by S. A. Srinivasan (Indian Railways). 135 pages, charts, diagrams. Published by Asia Publishing House; distributed by Taplinger Publishing Co., Inc., 119 West 57th St., New York, 10019. $9.50.

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Is education adequate?

Systematic effort needed to keep staff knowledge abreast with rapid progress in technology and in improved methods.

An officer of a large manufacturing concern was recently quoted as predicting that half the knowledge possessed by its engineers would, in ten years, be obsolete; and half the knowledge its engineers would need ten years hence is not yet available.

This is just another way of saying that technological progress is now progressing at such speed that the adequately educated engineer (or accountant or systems analyst or marketing officer) does not stay educated unless he keeps on going to school intermittently throughout his entire career.

The problem of keeping up-to-date in rapidly progressing technologies confronts railroads and railroadmen no less acutely than it does other professional occupations and other industries. Several large manufacturers maintain schools within their organizations where important staff members are updated periodically. Large utility companies (e.g., the Bell Telephone System) are providing interior educational facilities that are both extensive and intensive, as the need may direct.

How about the railroads? To what degree are they meeting the need for continuing education of their people in middle management (and upward)? As usual, the situation of individual railroads varies widely. One railroad (the Canadian National) has been operating its own staff college each summer for some 50 officers. Many railroads send qualified people to standard educational institutions for refresher (otherwise known as "retread") instruction. Most of these courses cover managerial techniques, applicable in any business, although two or three of them provide specialized courses in transportation problems—occasionally directed specifically at railroad work.

Looking over the whole field, however, it certainly appears that there are quite a few railroads, including some big ones, that have not yet provided up-dating instruction for all their people who could profit from it. The Railway Systems & Management Association meets some of the need. So do the various divisions of the Association of American Railroads. But the involvement of most railroads in such activities certainly, on the average, is not as intensive as that of the very largest utility and manufacturing companies.

There are not many railroads that are big enough to provide their own "interior" school for continuing education for all higher-level employees—on the scale provided by some of the largest manufacturers and the Bell Telephone System. Regular educational institutions may meet the need, at least in part. But isn't there at least a chance that some of this education could be provided by the railroads jointly—either on a territorial or a national basis?

The kind of knowledge—as to methods of procedure, and sources of information—needed by top operating or marketing officers (for instance) would not differ greatly as between the A&B Railroad, on the one hand, and the XY&Z Railroad, on the other. And the same would be true for all other railroads in between. Why should it be necessary for the individual railroad to provide its own school, when a single staff college (or territorial ones) could do the job without needless duplication of effort, and hence, probably, more thoroughly and, possibly, at less expense?

Instruction in managerial problems provided at regular "outside" institutions has its own special merit, in putting railroad officers into close contact with their counterparts in other industries. But where can an alert middle-management officer go to learn all there is to know about the successful performance of the duties of (say) general manager, or those of the head of a freight service marketing department?

Needed at all levels

The need for continuing education (or re-education) permeates every railroad organization—not only at the top and middle, but also in the lower ranks. For these latter, special kinds of instruction are being provided (e.g., the method known as "programmed education"). But the greatest need for professional modernity comes at the top of an organization, because on these people falls the duty of devising educational plans for employees further down in the ranks. Hence it is that the first people that need to keep up-to-date are the people responsible for the instruction of others.

Education of professional grade in railroad work suffers from the lack of adequate textbooks. This dearth exists because authors competent to write such textbooks cannot, as things are now, expect to collect enough in publisher's royalties to repay the time that writing an authoritative textbook would require. Such textbooks might, however, be developed as a by-product from courses designed to provide instruction in the work of specific railroad departments.

All in all, the problem of keeping professional education abreast of progress is one of the railroads' big pieces of unfinished business.

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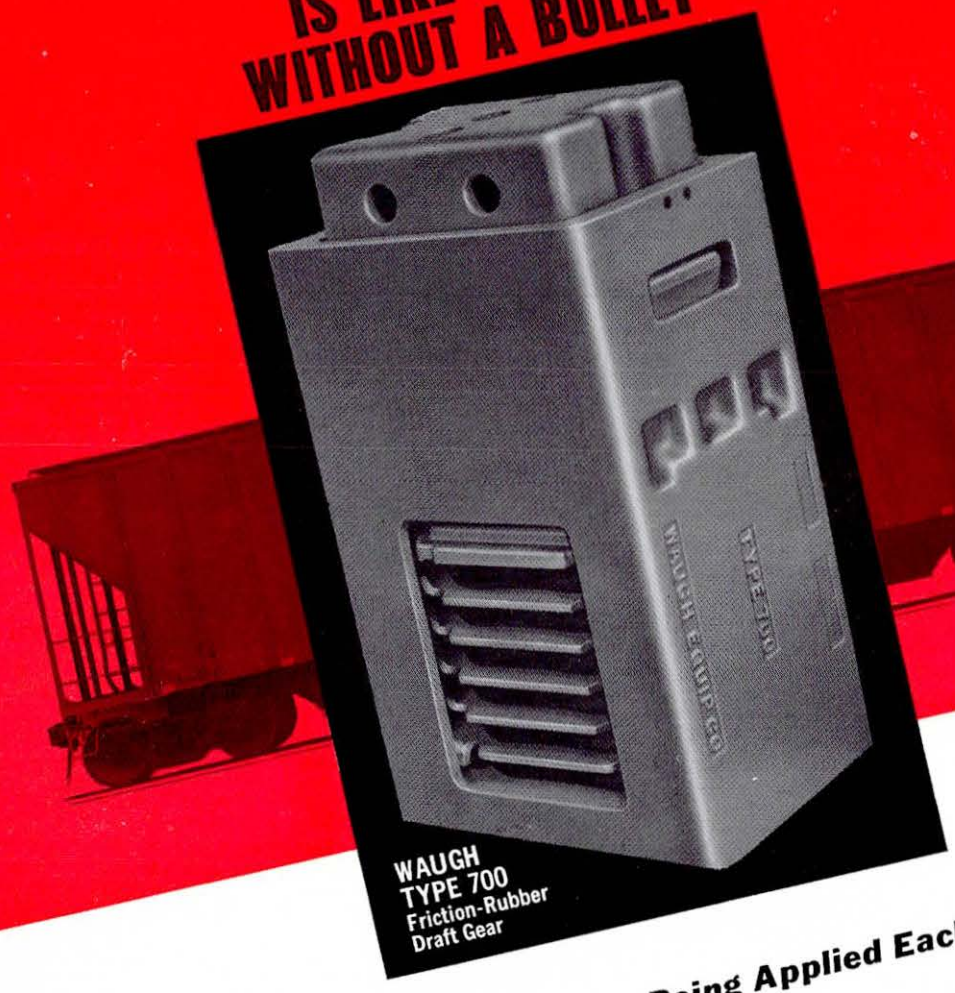

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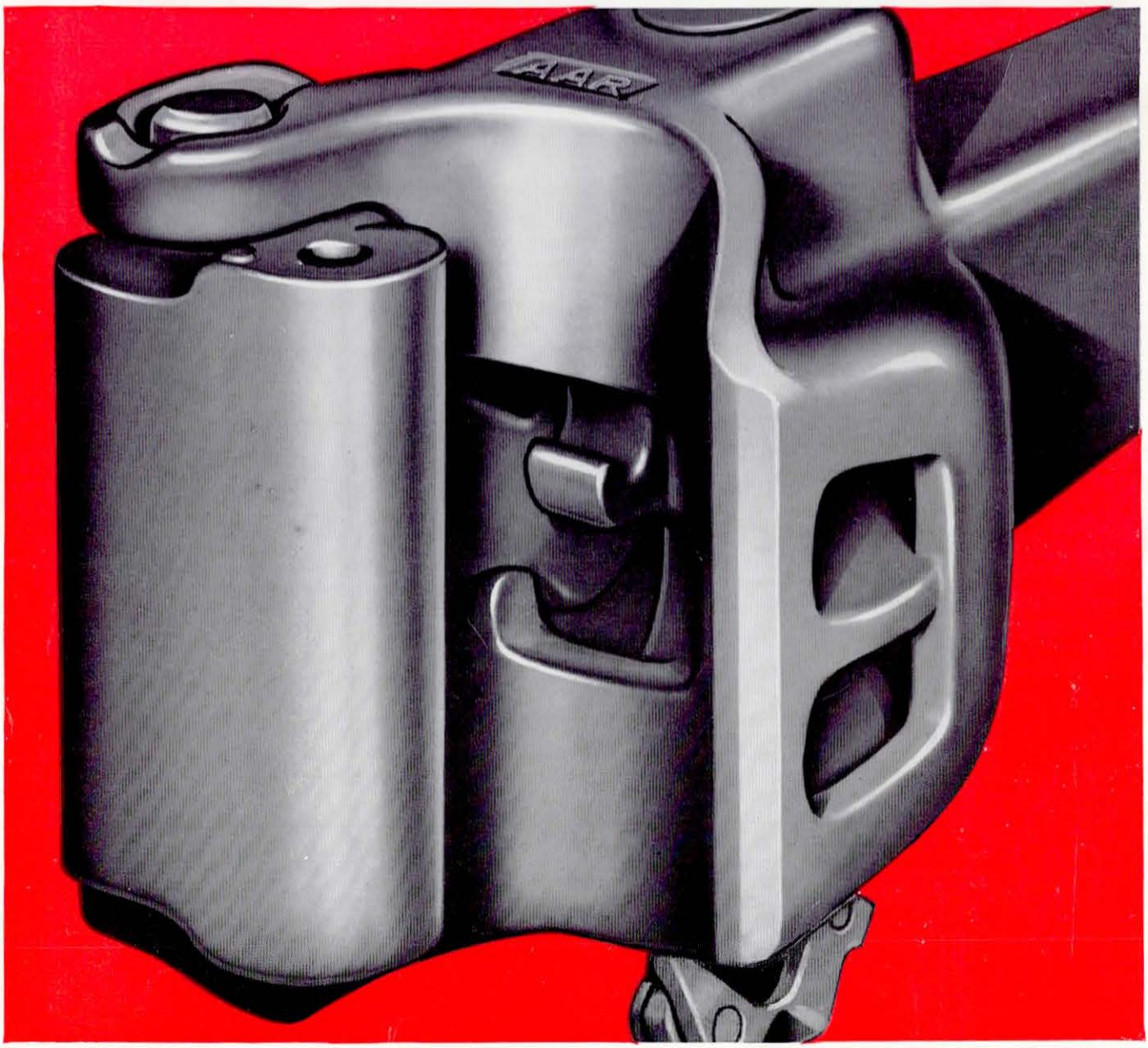
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